BOEING COMMERCIAL AIRPLANE COMPANY

3 1176 00167 7765

D6-49354
Test Report
May 1981

Nacelle Aerodynamic and Inertial Loads (NAIL) Project

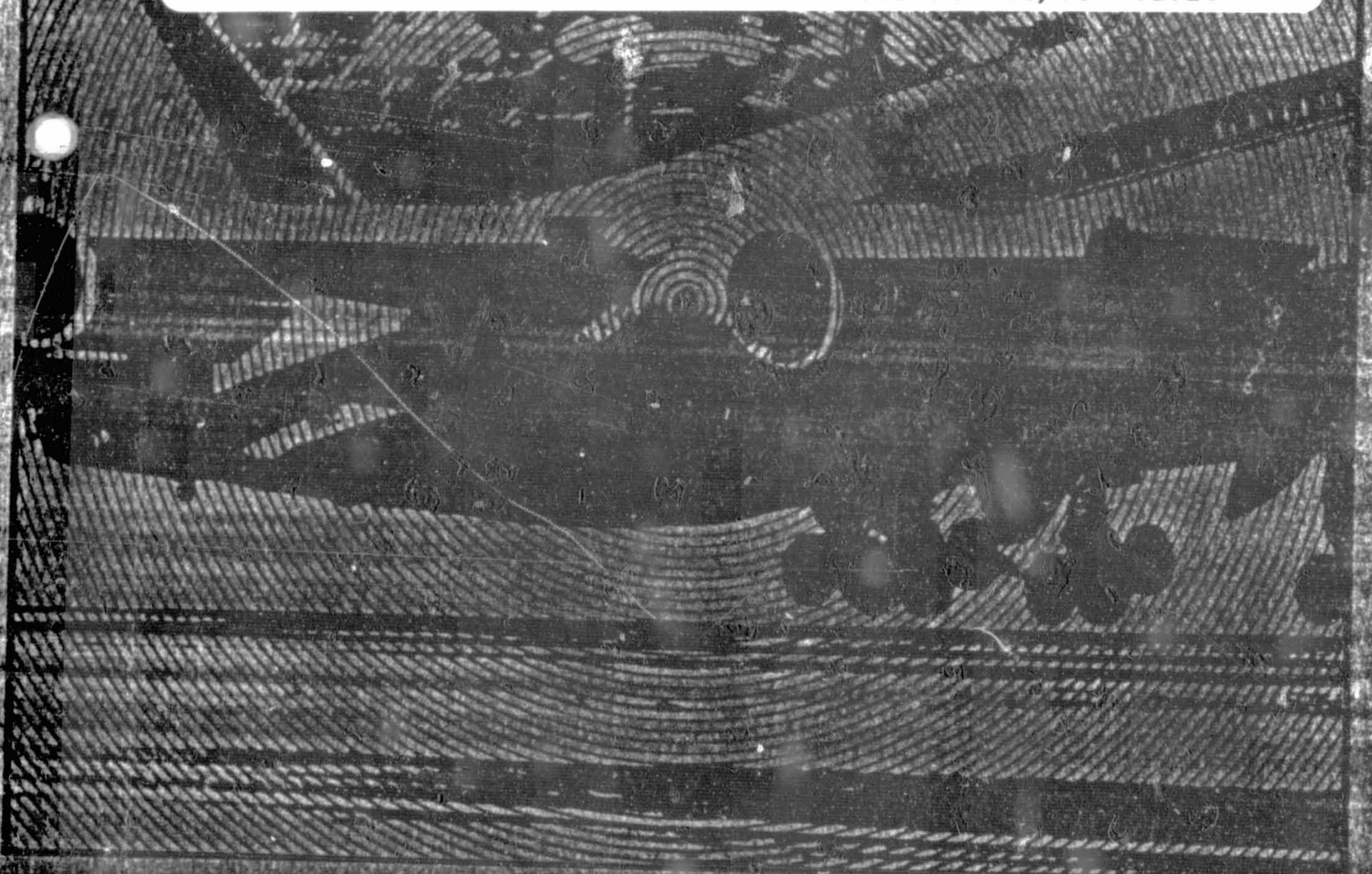
Contract NAS1-15325

ORIGINAL PAGE IS
OF POOR QUALITY

(NASA-CR-165760) NACELLE AERODYNAMIC AND INERTIAL LOADS (NAIL) PROJECT Test Report, Oct. 1979 - Nov. 1980 (Boeing Commercial Airplane Co., Seattle) 352 p HC A16/MF A01 CSCL 01C G3/05

N83-30402

Unclas
12625



FOR EARLY DOMESTIC DISSEMINATION

ERRATA

p. viii, line 6	change to Wing Upper Surface
p. 2, lines 1 through 4	delete; add "During the IPSA portion of the NAIL program, surface static pressures were measured as follows on both the inboard and outboard engine installations: • Internal and external inlet surfaces • Engine core cowling • Pylon • Neighboring upper and lower wing surfaces A data base at these locations was acquired at Mach numbers 0.77, 0.80, 0.86, and 0.91 through three test flights."
p. 3, line 7	change NASI to NAS1
p. 6, line 11	change 499 to 557 and 322 to 380
p. 9, line 26	change $(W_A\sqrt{\theta_{T_2}/\delta_{T_2}})$ to $W_A\sqrt{\theta_{T_2}}/\delta_{T_2}$
p. 10, insert	∞ free stream value α angle of attack θ_{T_2} total temperature ratio at engine face, T_{T_2}/T_{SLS} ρ air density, slug/ft^3 θ circumferential position, degrees δ_{T_2} total pressure ratio at engine face, P_{T_2}/P_{SLS}
p. 10, line 20	add SUBSCRIPTS after T_2 and before f
p. 10, line 22	change "pylon-core cowl intersection" to "pylon-fan cowl intersection"
pp. 11 & 12, line 1	change "pylon-fan cowl intersection" to "pylon-core cowl intersection"
p. 16, figure 5	at top of photograph, obliterated callouts are WBL 809, 834, and 870, reading left to right
p. 16, figure 6	callouts reading from top to bottom in lower left-hand corner are Inboard aileron Trailing-edge flaps

p. 25, figure 9	in table for outboard engine (No. 4) change the Point T NAC STA value from 216.12 to 206.10
	delete "Side View" from over bulleted items
	in upper right hand corner, change "2°" callout to "2-deg pitch-up"
p. 28, line 2	change to "...up to 2 deg relative to the WRP (fig. 9)."
p. 28, line 10	change to "...WLT for each engine using distances given in figure 9."
p. 28, line 17	add after "...or WBL 834 outboard."—"This reference nacelle station is labeled NAC STA in figure 9."
p. 29, table 4	in table, change 301.07 cm (118.53 in) to 301.056 cm (118.526 in)
	under r_{EXT}/L_k (first part of table) change values to 0.2869 0.2859 0.2829 0.2812 0.2799 0.2781 0.2765 0.2747 0.2730 0.2708 0.2696 0.2662 0.2638
	and in second column r_{EXT}/L_k change 0.2329 to 0.2330
p. 35, table 7	change callout M to G (upper left-hand corner)
	change C_m = 206.080 cm (81.134 in) to C_g = 206.080 cm (81.134 in)
	X,Y = 0 @ m to X,Y = 0 at G
	change first line of table to
	X/C_g Y/C_g $\pm Z/C_g$
p. 36, table 8	in INBOARD and OUTBOARD tables interchange Y/C_n and Z/C_n headings

p. 37, table 9	in INBOARD and OUTBOARD tables interchange Y/C_n and Z/C_n headings
p. 38a, b, table 10	replace with two new pages
p. 39, table 11	delete 0.2750 and 0.4750 under WBL 445, UPPER and close up
p. 41, table 13	change NAC WL 180 to NAC WL 155 and change NAC WL 155 to NAC WL 180
p. 53, figure 21	change title to Accelerometer Installation (Thrust Link)
p. 61, figure 33	line 14, add "Surge valve bleed position" in second column
p. 69, line 8	change M_C and V_C to read M_D and V_D
p. 73, table 19	replace
p. 88, line 22	change 10 ft/s to 5 ft/s

APPENDIX A

A-6, table A-2	delete Engine 4 callout and boxed data
A-26, table A-22, line 4	change CONDITION 117, 1.5g to CONDITION 117, 1.6g
A-28, table A-24, line 4	change CONDITION 121, 1.5g to CONDITION 121, 1.6g
A-85, figure A-56	replace
A-87, figure A-58	replace
A-89, figure A-51	replace
A-97, figure A-68	replace
A-98, figure A-69	replace

APPENDIX B

B-10, figure B-1	delete data point at 1.25 on 090-deg plot
	delete data point between 1.25 and 1.50 on 150-deg plot
B-11, figure B-1	delete data points between 1.25 and 1.75

B-12, figure B-1	delete data points between 1.25 and 1.75
B-13, figure B-1	delete data points between 1.00 and 1.50
B-29, figure B-2	delete data points between 1.25 and 1.75
B-30, figure B-2	delete data points between 1.25 and 1.50 on 090-deg plot
	delete data points between 1.25 and 1.50 on 150-deg plot
B-31, figure B-2	delete data points between 1.50 and 1.75
B-32, figure B-2	delete data points between 1.00 and 1.75
B-33, figure B-2	delete data points between 1.00 and 1.75
B-49, figure B-3	delete data points between 1.25 and 1.75
B-50, figure B-3	delete data point at 1.25
B-51, figure B-3	delete data points between 1.00 and 1.50
B-52, figure B-3	delete data points between 1.25 and 1.75
B-53, figure B-3	delete data points between 1.00 and 1.75
B-54, figure B-3	delete data points between 1.00 and 1.75
B-85 through B-87, figure B-5	delete local Mach = 0.0 data points
B-89, figure B-5	replace graph
B-91, figure B-5	WBL 870, replace graph
B-101 through B-103, figure B-5	delete local Mach = 0.0 data points
B-106, figure B-5	WBL 870, replace graph
B-116 through B-118, figure B-7	delete local Mach = 0.0 data points
B-121, figure B-7	WBL 870, replace graph
B-135, figure B-8	WBL 870, replace graph

MICROFICHE

Replaced entirely

NASA-CR- 165760

NACELLE AERODYNAMIC AND INERTIAL LOADS (NAIL) PROJECT

TEST REPORT

Contract NAS1-15325
MAY 1981

BOEING COMMERCIAL AIRPLANE COMPANY

FOREWORD

This document constitutes the test report of work conducted under NASA contract NAS1-15325 from October 1979 through November 1980. The contract was managed by the NASA Energy Efficient Transport Office (EETPO), headed by Mr. R. V. Hood—a part of the Aircraft Energy Efficiency (ACEE) program organization at the Langley Research Center. Mr. D. B. Middleton and Mr. K. W. Heising were the technical monitors for the contract. The work was performed within the Vice-President-Engineering and the Vice-President-Flight Operations organizations of the Boeing Commercial Airplane Company. Key contractor personnel responsible for the contract work were:

G. W. Hanks
Program Manager

R. L. Martin
Project Manager

K. H. Dickenson
Structures Technology

W. R. Lambert
Propulsion Technology

W. F. Wilson
Flight Test Operations

B. W. Farquhar
Propulsion Technology

F. J. Davenport
Structures Technology

F. W. McIlroy
Flight Test Instrumentation

C. D. Beard
Flight Test Instrumentation

E. L. Wallace
Flight Test Analysis

R. D. LaBounty
Industrial Engineering Flight Test Support

B. G. Skelton
Flight Test and Crew Training Support

Results of the total program, including analysis of the test data contained in this report, will be provided in a separate NASA contractor report.

The test effort was conducted in cooperation with the Pratt and Whitney Aircraft Company, who were supported by the NASA Lewis Research Center under Contract NAS3-20632.

Principal measurements and calculations used during these studies were in customary units.

CONTENTS

TABLES

ORIGINAL PAGE IS
OF POOR QUALITY

FIGURES

ORIGINAL PAGE IS
OF POOR QUALITY

FIGURES (Continued)

ORIGINAL PAGE IS
OF POOR QUALITY

FIGURES (Continued)

ORIGINAL PAGE IS
OF POOR QUALITY

FIGURES (Continued)

1.0 SUMMARY

The Nacelle Aerodynamics and Inertial Loads (NAIL) program comprised a series of test flights that produced an in-flight measured data base of the aerodynamic and inertial loads imposed on right-hand inboard and outboard JT9D engines installed on the Boeing 747 RA001 test bed aircraft. Wing and engine installed performance data were also obtained. In this report the aerodynamic and inertial loads portion of the test program is referred to as the flight loads, and the wing and engine installed performance portion is referred to as the installed propulsion system aerodynamics (IPSA).

During the flight loads portion of the test program, surface static pressures were measured on the:

- Internal and external surfaces of the inboard inlet
- External surface of the fan cowl doors of the inboard nacelle
- External surface of the fan exhaust sleeve of the inboard nacelle
- Internal and external surfaces of the outboard inlet

Linear accelerations and pitch and yaw rates were also measured on both inboard and outboard nacelle and pylon installations.

The following measurements were made simultaneously with the surface static pressure measurements:

- Engine clearance changes on both inboard and outboard engines
- Turbine case temperature on the inboard engine
- Engine performance on both inboard and outboard engines

The resulting data were correlated with the flight loads. These measurements—

- Duplicated a portion of the airplane flight acceptance test profile
- Demonstrated the effects of variations in takeoff gross weight
- Illustrated the effects of high-g maneuvers

During the IPSA portion of the NAIL program, surface static pressures were measured on the nacelle, pylon, and neighboring wing surfaces on engines 3 and 4 (inboard and outboard). A data base was acquired at Mach numbers 0.77, 0.80, 0.86, and 0.91 through three flights of the RA001.

Pressure coefficient and local Mach number distributions were plotted for each row of pressure orifices. A geometrical description of the surfaces and pressure orifice locations on the nacelle, pylon, and wing is provided. The IPSA data base, derived from a full-scale flight vehicle, should assist in verification and development of analytical models and eventually provide the ability to predict wing-mounted propulsion system performance.

2.0 INTRODUCTION

The test program recommended in the feasibility study (ref. 1) describes a flight test in which flight loads and engine clearance changes can be measured simultaneously on the 747/JT9D engine installation. NASA-Langley and NASA-Lewis Research Centers authorized and jointly funded this program under separate contracts for Boeing Commercial Airplane Company (BCAC) and Pratt & Whitney Aircraft (P&WA). The BCAC effort, Nacelle Aerodynamic and Inertial Loads (NAIL) project, was funded by NASA-Langley under Task 4.3 of contract NAS1-15325. The P&WA effort was funded by NASA-Lewis under Task V, JT9D Engine Diagnostic Flight Loads Test program, contract NAS3-20632. Subsequently, the BCAC contract was revised to include the installed propulsion system aerodynamics (IPSA) effort. The successful completion of this joint test program was only possible through the continuous and extensive coordination between BCAC and P&WA and the excellent cooperation of the NASA-Langley and NASA-Lewis Research Centers. This document reports the BCAC effort during the test program and represents early release of flight test data.

The testing was conducted on the Boeing-owned 747 RA001 test bed airplane during the concurrent 767/JT9D-7R4 engine development program. Following a functional check flight conducted from Boeing Field International (BFI) on 3 October 1980, the airplane and test personnel were ferried to Valley Industrial Park (GSG) near Glasgow, Montana, on 7 October 1980. The combined NAIL and 767/JT9D-7R4 test flights were conducted at the Glasgow remote test site, and the airplane was returned to Seattle on 26 October 1980.

2.1 OBJECTIVES

Objectives of the NAIL flight test program were to:

- o Measure flight loads (aerodynamic and inertial) typical of acceptance test and revenue service
- o Explore the effects of gross weight, sink rate, pitch rate, and various maneuvers on nacelle loads
- o Measure simultaneously engine clearance closures and engine performance changes

- Provide a data base for designing improved propulsion systems (performance retention)

- Provide a data base of pressures measured on wing, pylon, and nacelle surfaces of both inboard and outboard propulsion installations of commercial transport-sized aircraft and to gather information on airflow patterns surrounding the powerplant installations using static pressure surveys

2.2 BACKGROUND

Since introduction of the jet engine into commercial transport service, historical data have indicated that deterioration of engine specific fuel consumption (SFC) occurs over the life of installed engines. Until recent shortages in fuel and the resulting high fuel costs, increases in fuel consumption were considered to be a nuisance rather than a technical problem requiring a solution. Motivated by fuel shortages and costs, the NASA Engine Component Improvement (ECI) program (part of the NASA Aircraft Energy Efficiency program) was made responsible for determining the cause of and potential solutions to installed engine SFC deterioration. As part of the ECI program, BCAC assisted P&WA under their NASA-Lewis contract NAS3-20632 during evaluation of the problem. It was found that the SFC of engines increased from 0.5% to 6% from the time of removal from the acceptance test stand followed by installation and operation on the airplane for a given period of time. Measurement of rotor blades at the outer diameter and inspection of the inner surface of engine cases indicated that definite interference occurred between the blades and the case. This interference resulted in increased clearance and gas flow leakage between the blades and the outside case. The study found that 87% of the increase in SFC was due to flight loads occurring within the first 50 flight cycles.

Factors contributing significantly to engine performance losses are divided into engine loads and flight loads, as follows:

- Engine loads (those loads not related to the flight environment)
    - Internal engine pressures
    - Thermal loads due to temperature differentials
    - Thrust loads—fore and aft
    - Centrifugal loads

- Flight loads (those loads imposed by the flight environment)
  - Aerodynamic pressures
  - Inertial forces

A finite element model analysis using these factors predicted a 1% increase in SFC at sea level due to the aircraft acceptance flight test.

Aircraft fuel consumption is proportional to aircraft drag. Thus to reduce fuel consumption, drag should be minimized. Most mechanisms of drag production are understood and are predictable to some degree, with the exception of a component termed "interference drag." This drag results from disruption of the flow over the wing caused by the wing-mounted propulsion system in the vicinity of the propulsion system. This interruption interferes with the wing performance. Current techniques for estimating and minimizing interference drag rely heavily on comprehensive test programs that independently vary a set of parameters believed to significantly influence interference. Current analytical technology is sufficiently advanced so that transonic potential flows around arbitrary three-dimensional bodies can be accurately predicted. However, the development of analytical techniques depends extensively on experimental results for comparison of the predicted results. Development of analytical techniques to model the physics of flow about propulsion systems installed near wings has been initiated and some of the techniques are nearing completion. However, the comprehensive data base to which these predictions could be compared is lacking.

2.3 APPROACH

Recommendations and conclusions of previous studies prescribed a feasible cost-effective approach to the NASA-funded NAIL/JT9D Flight Loads flight test program. This joint program involved BCAC and P&WA, funded by NASA-Langley and by NASA-Lewis, respectively.

A 15-hour flight test program covering portions of the acceptance flight profile, variations in takeoff and landing conditions, and high-g turns was chosen to measure simultaneously the flight loads (cause) and engine clearance changes (effect) associated with engine performance deterioration. The flight test program used the Boeing-owned 747 RA001 aircraft.

Aerodynamic loads were measured by 252 static pressure ports on the inboard nacelle (engine 3) and 45 static pressure ports on the outboard nacelle (engine 4).

Inertial loads were measured by six accelerometers and two rate gyros on both the inboard and outboard engines. The pylon and strut interface of both engines was equipped with an additional six accelerometers. The resulting engine clearance changes were measured by laser proximity probes on the fan of both engines and on the high-pressure turbine of the inboard engine. The expanded engine performance instrumentation and 20 high-pressure turbine thermocouples provided additional data on the inboard engine for resolving clearance and performance changes.

The IPSA pressure data were obtained in the neighborhood of both engines by a total of 499 static pressure orifices; 322 of these were arranged in rows above and below the wing and on each side of both pylons and core cowls. The remaining data, on both inlets and fan cowls, were acquired from part of the aerodynamic loads instrumentation.

3.0 SYMBOLS AND ABBREVIATIONS

A_n	Fourier-Bessel coefficient for nth cosine harmonic
AC	axial acceleration
ACCEL	acceleration
ADAMS	airborne data analysis and monitor system
A-flange	engine front flange at nacelle station 100
A_x	acceleration in x-direction
A_y	acceleration in y-direction
A_z	acceleration in z-direction
B_n	Fourier-Bessel coefficient for nth sine harmonic
BCAC	Boeing Commercial Airplane Company
BFI	Boeing Field International, Seattle, Washington
CG	center of gravity
C_p	pressure coefficient
deg	degrees
ECI	engine component improvement program
EPR	engine pressure ratio
E3	engine position 3
E4	engine position 4
ft	feet
FLTRD	filtered
FS	front spar
FT	flight test
F_x	force in the x-direction
F_y	force in the y-direction
F_z	force in the z-direction
g	acceleration of gravity
GSG	Valley Industrial Park, northeastern Montana

GW	airplane gross weight
H_p	pressure altitude
HPC IGV POS	high-pressure compressor inlet guide vane position
HPT	high-pressure turbine
HWLDG	heavyweight landing
Hz	hertz (cycles per second)
IGDA	interactive graphics data analysis
in	inch
in-kip	1000 inch-pounds
INLET STA	inlet station, value increases moving aft along inlet centerline
IPSA	installed propulsion system aerodynamics
IRIG	inter-range instrumentation group master clock
kn, KTS	knots
kcas	knots calibrated airspeed, indicated airspeed corrected for position error (calibrated airspeed equals true airspeed in standard atmosphere at sea level)
LAST	final formated tape produced by the flight test data system
lb	pound
LH	left hand
lbm	pounds mass
M	Mach number, ratio of true airspeed to the velocity of sound
M_c	design cruise Mach number
M_x	moment about the x-axis
M_y	moment about the y-axis
M_z	moment about the z-axis
min	minutes
NAC BL	nacelle buttock line, value increases moving outboard in the nacelle coordinate system

NAC STA	nacelle station, value increases moving aft in the nacelle coordinate system
NAC WL	nacelle waterline, value increases moving up in the nacelle coordinate system
NAIL	nacelle aerodynamics and inertial loads
NASA	National Aeronautics and Space Administration
NASTRAN	NASA structural analysis
N1	low-pressure rotor speed
N2	high-pressure rotor speed
OCLK	clock position
P	pressure
PC	pressure coefficient
POS	position
PSI (lb/in^2)	pounds per square inch
P_S	static pressure
PS3	low-pressure compressor discharge static pressure
PS4	high-pressure compressor discharge static pressure
P_T	total pressure
PT2.5	fan stream total pressure at exit guide vane
PT3	low-pressure compressor discharge total pressure
PT7	low-pressure turbine discharge total pressure
PWR LVR ANG	power lever angle
P&WA	Pratt & Whitney Aircraft
q,Q	dynamic pressure, $\frac{1}{2} \rho V^2$
RA001	Boeing-owned 747-100 research aircraft 1
RH	right hand
rms	root mean square
RWA	referred engine airflow, $\left(W_A \sqrt{\theta_{T_2}} / \delta_{T_2}\right)$
sec	seconds
S	arc length along surface from highlight
S_{nom}	nominal arc length along surface

SFC	specific fuel consumption
SLS	sea level standard
TO	takeoff
TR	thrust reverse
T_T	total temperature
TT3	low-pressure compressor discharge total temperature
TT4.5	high-pressure compressor discharge total temperature
TT6	high-pressure turbine discharge total temperature
TT7	low-pressure turbine discharge total temperature
V	true airspeed, feet per second
V_C	design cruise speed
V_S	stalling speed or the minimum steady flight speed at which airplane is controllable
WA	engine airflow
WBL	wing buttock line, value increases by moving outboard
W_f	fuel flow rate
WFS	wing front spar
WRP	wing reference plane
WUT	windup turn, a level turn produced by increasing the angle of bank at a prescribed rate
	free stream value
	angle of attack
T_2	total temperature ratio at engine face, T_{T_2}/T_{SLS}
	air density, slug/ft^3
	circumferential position, degrees
T_2	total pressure ratio at engine face, P_{T_2}/P_{SLS}
f	fan cowl
g	pylon-core cowl intersection
h	highlight
i	inlet
k	core cowl
l	engine 4 wing-pylon intersection

m	pylon-fan cowl intersection
n	engine 3 wing-pylon intersection
s	pylon (strut)
w	wing

4.0 TEST DESCRIPTION AND RESULTS

4.1 TEST DESCRIPTION

The Boeing-owned 747 RA001 test bed aircraft (fig. 1) was the basis of the Nacelle Aerodynamic and Inertial Load (NAIL) flight test program, which comprised two basic studies and data collection systems divided into the flight loads and installed propulsion system aerodynamics (IPSA) programs. Where necessary, discussion of the flight loads and IPSA portions are separated for clarity. However, airplane and performance data were used by both programs, and some of the flight loads pressure data were used by the IPSA program.

4.1.1 Test Vehicle

4.1.1.1 Flight Loads

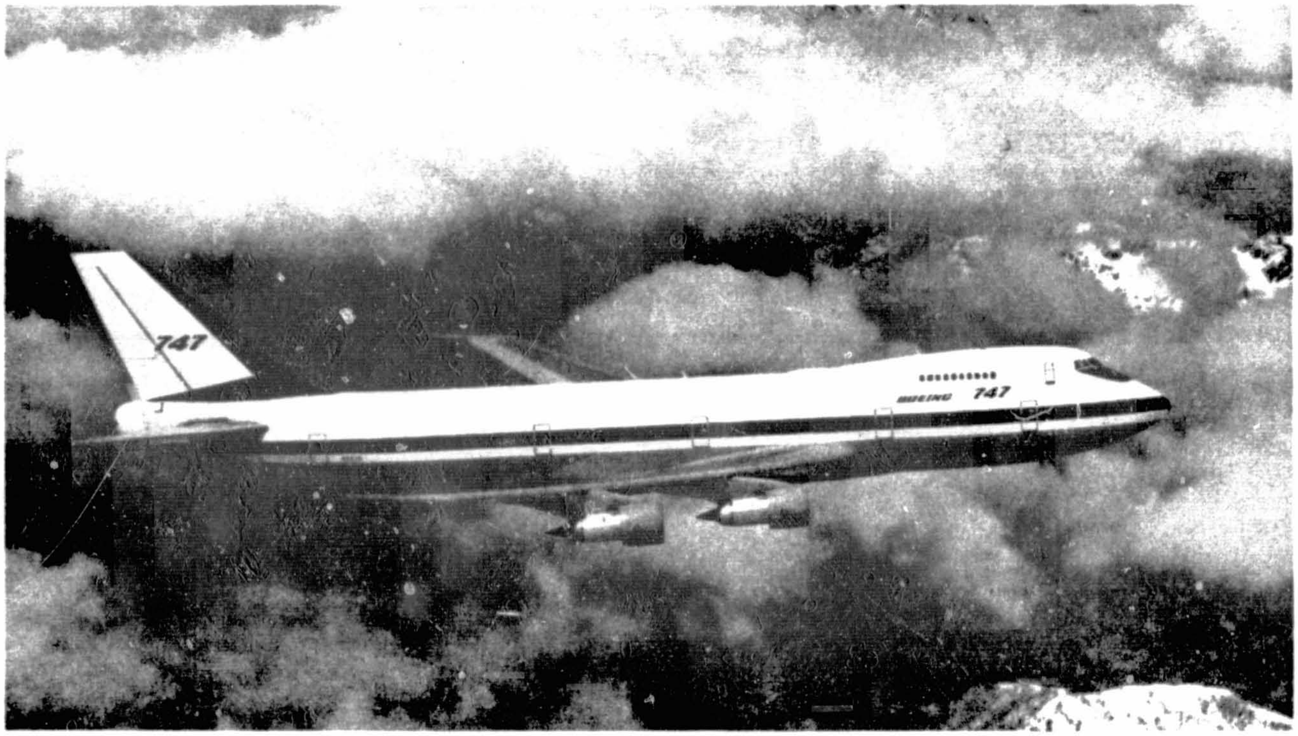
The NAIL program required fabrication and installation effort to provide the means to collect, control, and maintain the quality and quantity of data obtained. The flight loads portion of the program required instrumentation of the inboard and outboard engines (i.e., positions 3 and 4). Highest emphasis was placed on engine 3, which is shown on the wing during the buildup period (fig. 2).

Likewise, during the postflight test phase, refurbishment was necessary to prepare the aircraft for the next program. Inlet 3 (fig. 3) was removed followed by engine 3 (fig. 4), which was shipped to Pratt and Whitney Aircraft (P&WA) for further static testing followed by an analytical teardown and refurbishment.

4.1.1.2 Installed Propulsion System Aerodynamics

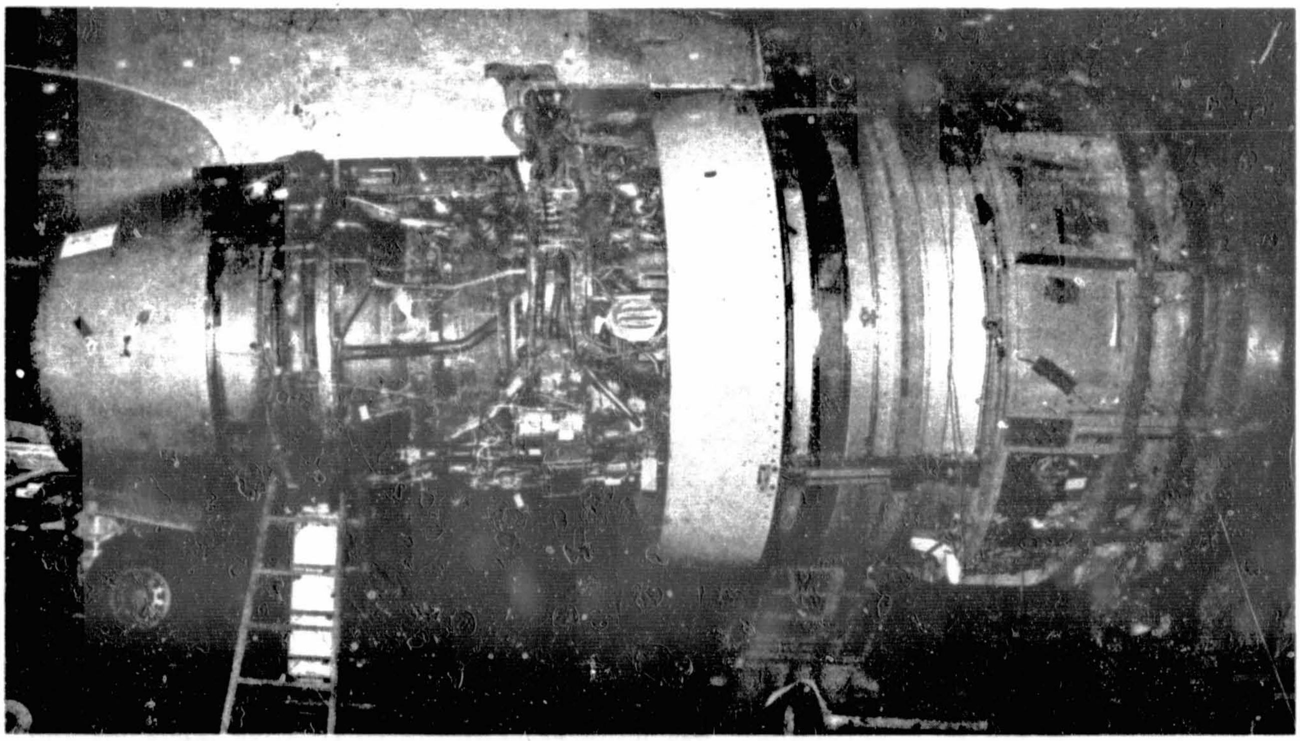
Description of the basic B-747 test vehicle pertinent to the IPSA program requires a geometrical definition of the fan inlet, fan cowl, pylon, and core cowl for an inboard and an outboard engine installation and requires neighboring wing geometry for each engine. This description is provided by defining the local geometry with relative positions and contours of pressure orifice rows and wing-pylon, pylon-nacelle intersections. Figures 5 and 6 describe the location and nomenclature for the pressure orifice rows.

ORIGINAL PAGE
BLACK AND WHITE PHOTOGRAPH



125209-1

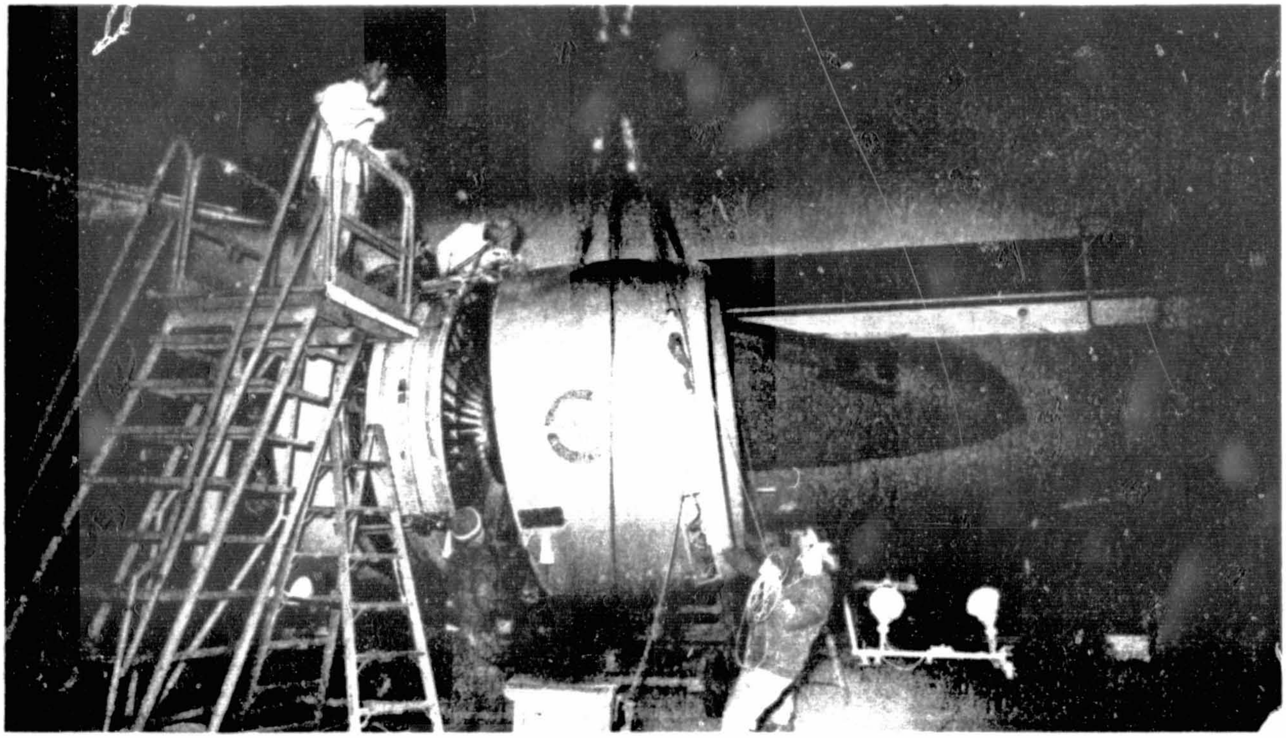
Figure 1. RA001 Test Airplane



125209-2

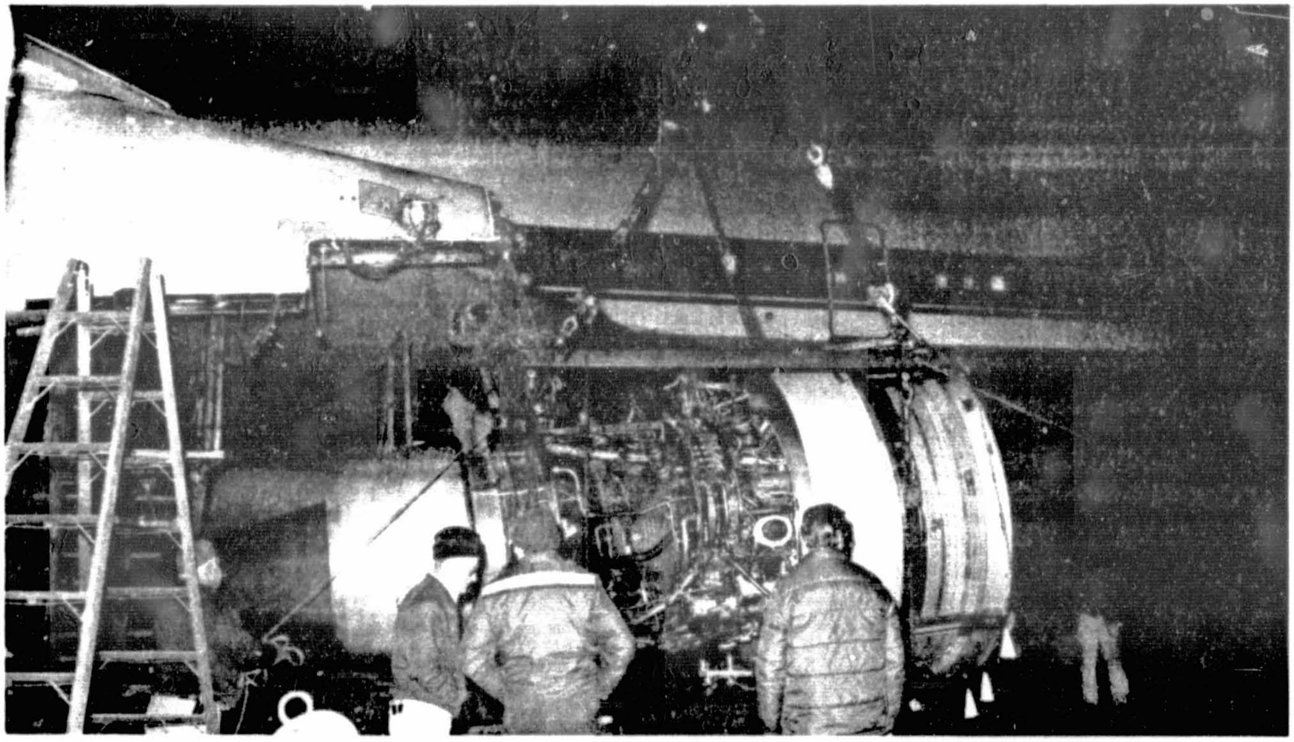
Figure 2. Inboard Engine Buildup

ORIGINAL PAGE
BLACK AND WHITE PHOTOGRAPH



125209-3

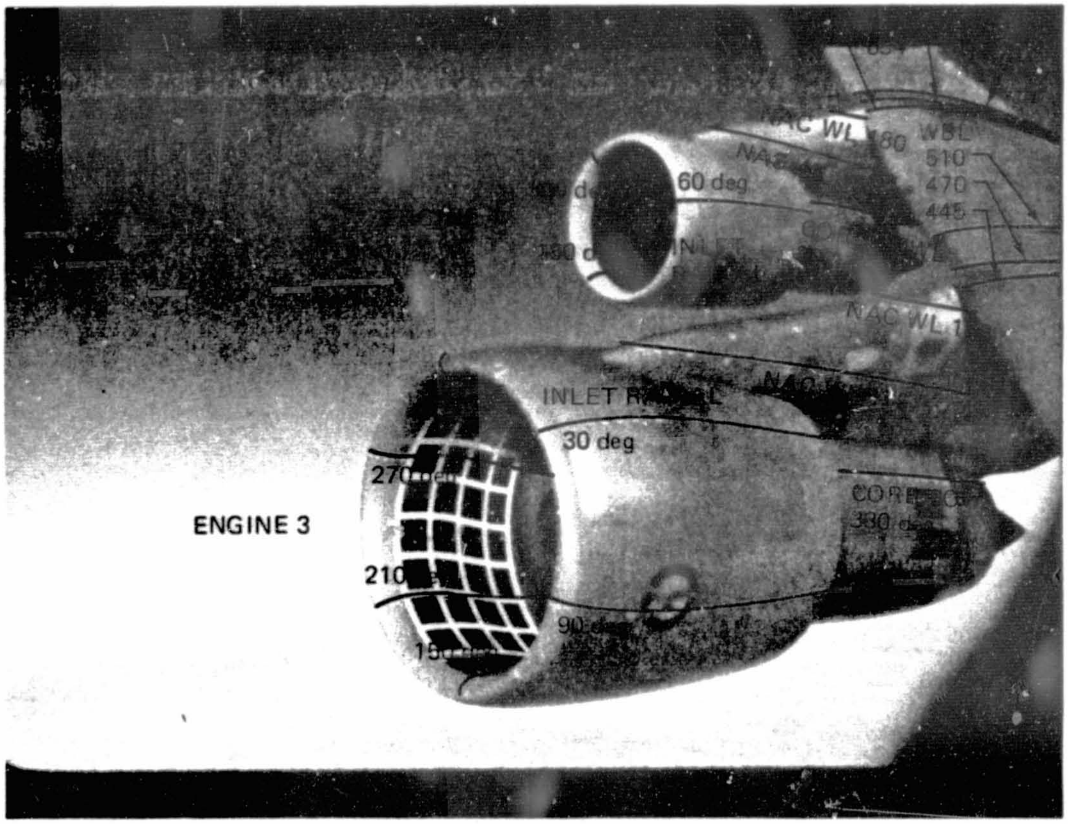
Figure 3. Inboard Inlet Removal



125209-4

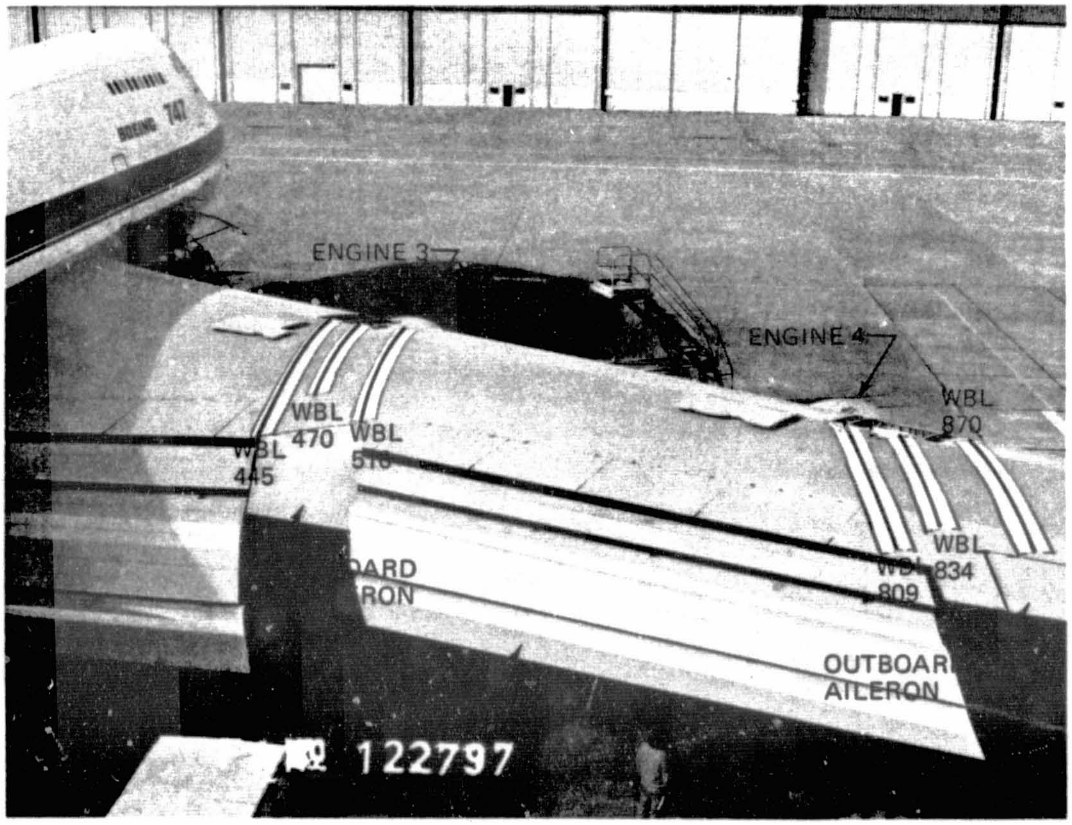
Figure 4. Inboard Engine Removal

ORIGINAL PAGE
BLACK AND WHITE PHOTOGRAPH



125209-450

Figure 5. Pressure Orifice Configuration



125209-449

Figure 6. Upper Wing Surface

Wing Geometry—Coordinates defining the wing cross-sectional profiles (table 1) are measured along and perpendicular to the wing reference plane (WRP). The WRP is an untwisted plane with 7-deg dihedral and +2-deg angle of incidence to the aircraft body centerline. The coordinates given in table 1 orient the wing profiles as they are in the no-load or jig position, so that the wing leading edges are not necessarily on WRP. See figure 7 for a plot of the jig wing twist. The in-flight wing twist, measured at 50% chord, varies with airplane Mach number and gross weight. In figure 7, the elastic wing twist is plotted for a Mach number of 0.86 at two representative airplane gross weights.

The spanwise location of each wing cross-sectional profile is denoted by a wing buttock line (WBL), which defines a plane perpendicular to the WRP (fig. 8). The relative fore and aft location of the wing cross-sectional profile at each WBL due to wing sweep is also shown in figure 8. Here, the leading-edge sweep angle is identified inboard and outboard of WBL 470 (inboard engine) and WBL 834 (outboard engine).

The leading-edge sweep angle is measured in the WRP relative to a line that is perpendicular to each WBL (470 and 834) and passes through the intersection of the WBL plane and the projection of the wing leading edge in the WRP (fig. 8). The wing leading-edge sweep is constant between WBL 445 and 834. However, it changes outboard of WBL 834 (outboard engine).

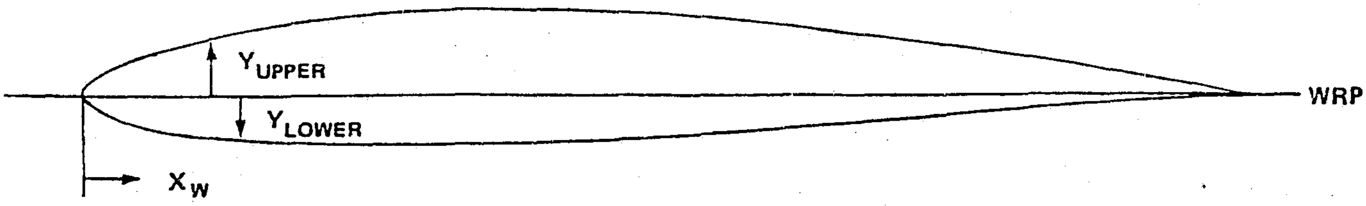
Also at WBL 834, a fairing extends from the outboard strut over the wing leading edge. Fairing coordinates given in table 1 are along the intersection of the WBL 834 plane and the fairing surface.

Engine Nacelle and Pylon Geometry—Coordinates defining engine nacelle and pylon geometry are given in a second coordinate system, the nacelle, which is shown in relation to the WRP in figures 8 and 9.

Pylon cross-sectional coordinates (tables 2 and 3) are measured along and perpendicular to the nacelle buttock line (NAC BL) 0.0, which defines a plane perpendicular to the WRP that is toed inboard 2-deg relative to the WBL plane (fig. 8). Depending on engine location, the origin of this 2-deg toe-in is at the intersection of the WBL 470/834 plane and the WRP at the projection of the WBL 470/834 wing profile leading edge. These profile leading edges are labeled T (figs. 8 and 9). A side view of the pylon and engine nacelle (fig. 9) shows that the pylon coordinates (tables 2 and 3) are contained in nacelle

ORIGINAL PAGE IS
OF POOR QUALITY

Table 1. Wing Coordinates



$X_W = 0$ @ WING LEADING EDGE

WBL 445	C_W = 989.78 cm (389.68 in)	
$\frac{X_W}{C_W}$	$\frac{Y_{UPPER}}{C_W}$	$\frac{Y_{LOWER}}{C_W}$
0.00	-0.00205	0.00205
0.01	0.00901	0.00695
0.02	0.01414	0.00837
0.03	0.01791	0.00965
0.05	0.02333	0.01196
0.10	0.03198	0.01665
0.15	0.03790	0.02058
0.20	0.04234	0.02393
0.25	0.04550	0.02682
0.30	0.04783	0.02910
0.35	0.04953	0.03067
0.40	0.05032	0.03103
0.45	0.05002	0.03064
0.50	0.04902	0.02951
0.55	0.04712	0.02761
0.60	0.04401	0.02533
0.65	0.03996	0.02269
0.70	0.03493	0.01987
0.75	0.02915	0.01691
0.80	0.02338	0.01398
1.00	0.0	0.0

125209-24-168

ORIGINAL PAGE IS
OF POOR QUALITY

Table 1. Wing Coordinates (Continued)

WBL 510 C_W = 892.44 cm (351.35 in)		
$\frac{X_W}{C_W}$	$\frac{Y_{UPPER}}{C_W}$	$\frac{Y_{LOWER}}{C_W}$
0.00	-0.00125	0.00125
0.01	0.00828	0.00578
0.02	0.01429	0.00694
0.03	0.01796	0.00797
0.05	0.02331	0.00988
0.10	0.03210	0.01386
0.15	0.03828	0.01742
0.20	0.04289	0.02063
0.25	0.04622	0.02362
0.30	0.04870	0.02624
0.35	0.05060	0.02820
0.40	0.05180	0.02909
0.45	0.05208	0.02912
0.50	0.05154	0.02840
0.55	0.05023	0.02687
0.60	0.04779	0.02488
0.65	0.04429	0.02251
0.70	0.03999	0.01983
0.75	0.03488	0.01636
0.80	0.02877	0.01265
1.00	0.0	0.0

125209-24-169

Table 1. Wing Coordinates (Continued)

WBL 470	C_W = 952cm (374.94 in)
X_W/C_W	Y_{UPPER}/C_W
0.00	-0.00171
0.10	0.03190
0.20	0.04246
0.30	0.04803
0.40	0.05078
0.50	0.04990
0.60	0.04539
0.70	0.03689
0.80	0.02528
1.00	0.0

WBL 834	C_W = 619.49cm (243.89 in)
X_W/C_W	Y_{UPPER}/C_W
0.00	0.0
0.10	0.03801
0.20	0.04797
0.30	0.05289
0.40	0.05551
0.50	0.05416
0.60	0.04937
0.70	0.04125
0.80	0.03009
1.00	0.0

FAIRING	
-0.129	-0.029
-0.087	-0.015
-0.025	0.005
0.037	0.015

125209-24-170

Table 1. Wing Coordinates (Continued)

WBL 809 C_W = 640.29 cm (252.08 in)		
$\frac{X_W}{C_W}$	$\frac{Y_{UPPER}}{C_W}$	$\frac{Y_{LOWER}}{C_W}$
0.00	0.0	0.0
0.01	0.01135	0.00464
0.02	0.01674	0.00536
0.03	0.02142	0.00599
0.05	0.02701	0.00722
0.10	0.03705	0.01043
0.15	0.04296	0.01377
0.20	0.04717	0.01706
0.25	0.05014	0.02011
0.30	0.05228	0.02269
0.35	0.05371	0.02440
0.40	0.05458	0.02511
0.45	0.05470	0.02491
0.50	0.05387	0.02400
0.55	0.05201	0.02249
0.60	0.04919	0.02023
0.65	0.04554	0.01817
0.70	0.04114	0.01558
0.75	0.03598	0.01297
0.80	0.03003	0.01037
1.00	0.0	0.0

125209-24-171

ORIGINAL PAGE IS
OF POOR QUALITY

Table 1. Wing Coordinates (Concluded)

WBL 870 C_W = 596.93 cm (235.01 in)		
$\frac{X_W}{C_W}$	$\frac{Y_{UPPER}}{C_W}$	$\frac{Y_{LOWER}}{C_W}$
0.00	-0.00140	0.00140
0.01	0.01034	0.00617
0.02	0.01591	0.00689
0.03	0.02008	0.00753
0.05	0.02723	0.00881
0.10	0.03685	0.01204
0.15	0.04298	0.01528
0.20	0.04715	0.01842
0.25	0.05017	0.02128
0.30	0.05234	0.02366
0.35	0.05383	0.02511
0.40	0.05476	0.02557
0.45	0.05498	0.02519
0.50	0.05417	0.02404
0.55	0.05238	0.02238
0.60	0.04966	0.02025
0.65	0.04608	0.01774
0.70	0.04183	0.01499
0.75	0.03685	0.01226
0.80	0.03093	0.00953
1.00	0.00140	-0.00140

125209-24-172

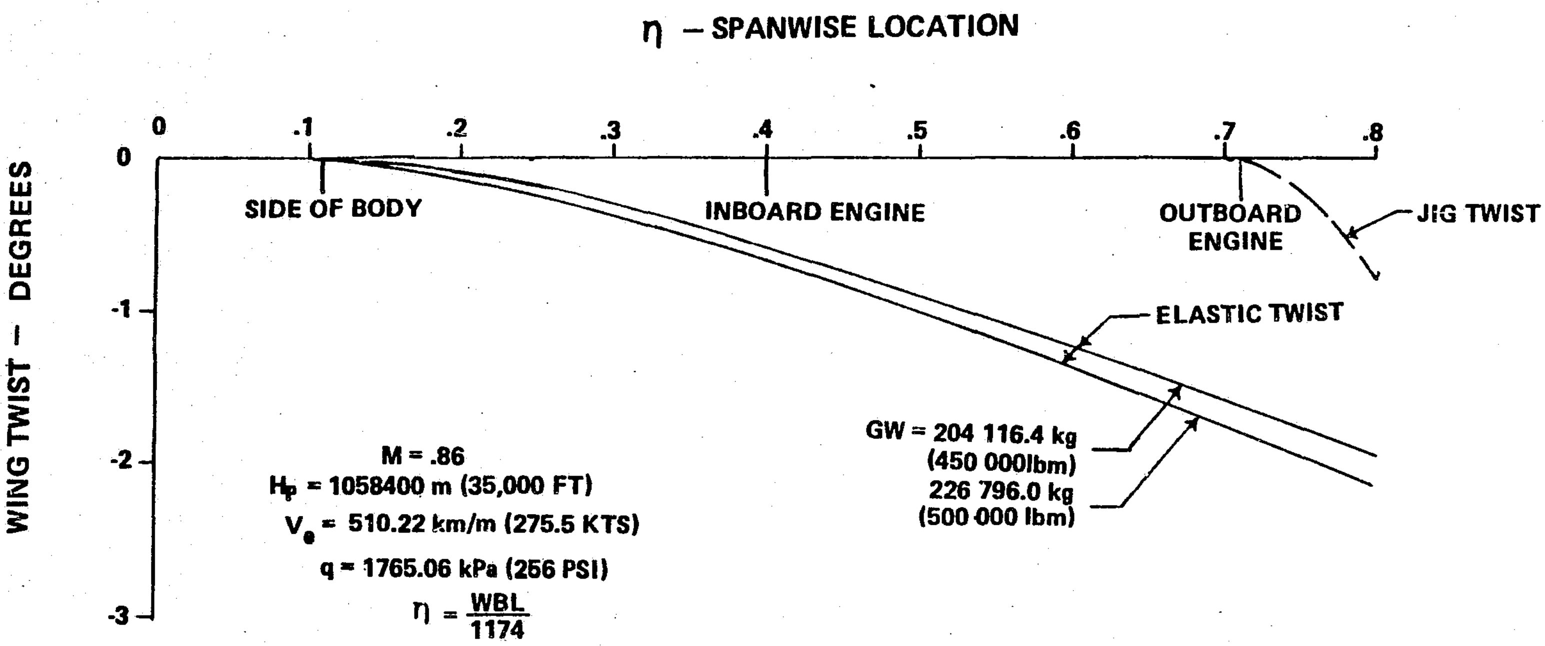
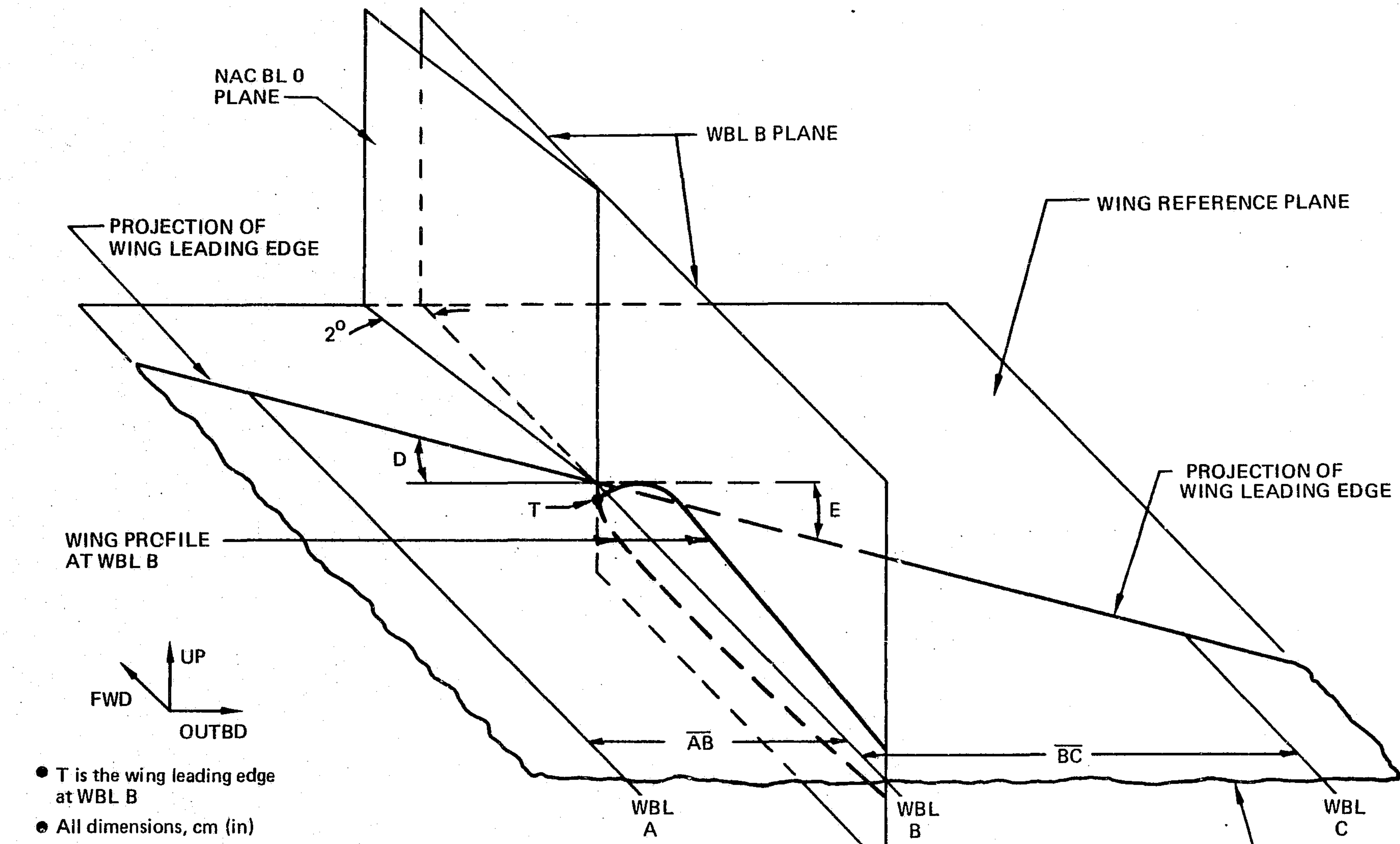


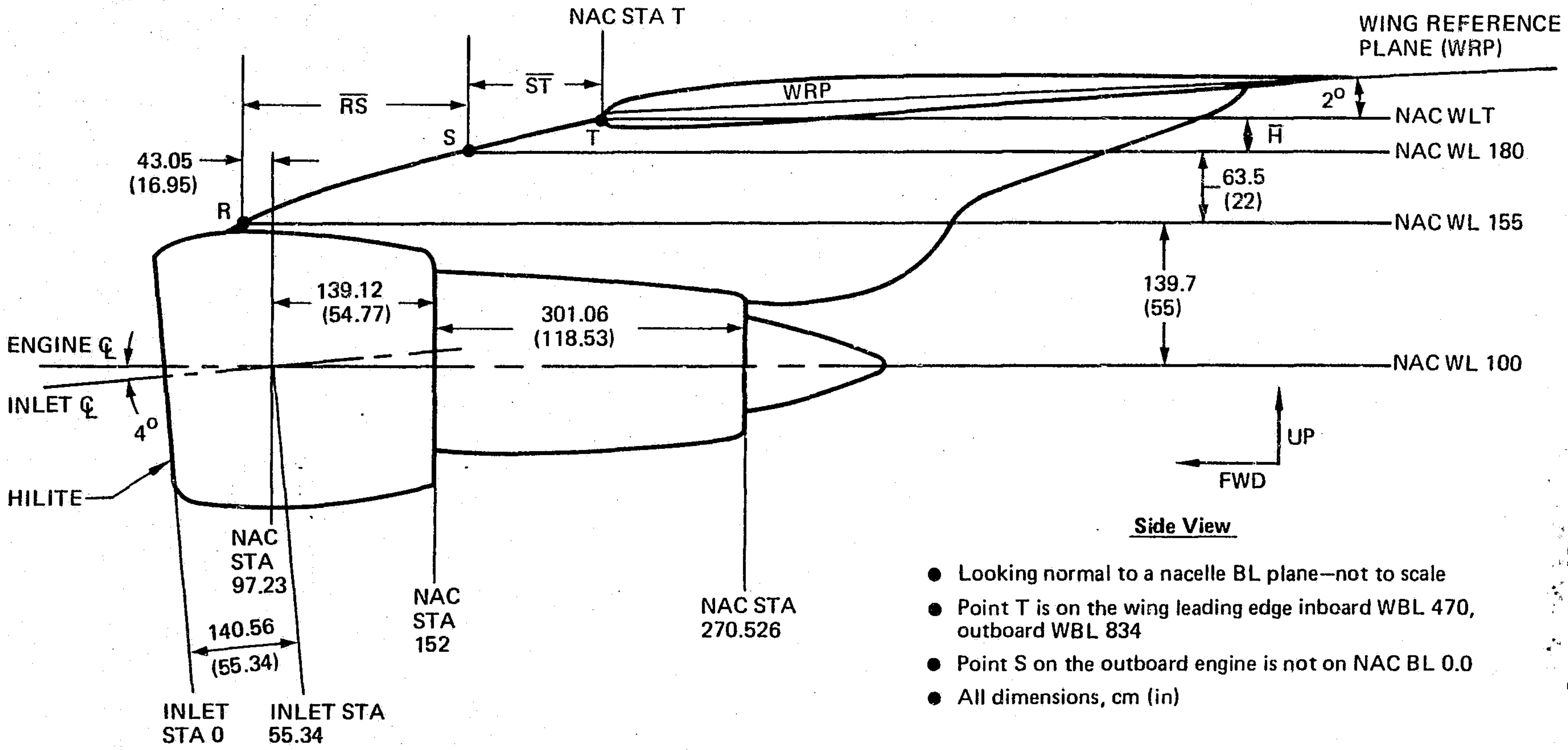
Figure 7. 747 Elastic Wing Twist



Engine	A	B	C	$\overline{AB}$	$\overline{BC}$	D	E	$\overline{\text{WBL 470 WBL 834}}$
Inboard (No. 3)	445	470	510	63.5 (25.0)	101.6 (40.0)	42.30°	42.30°	924.56 (364.00)
Outboard (No. 4)	809	834	870	63.5 (25.0)	91.44 (36.0)	42.30°	39.66°	

Figure 8. Wing Coordinate System

125394-452



Side View

- Looking normal to a nacelle BL plane—not to scale
- Point T is on the wing leading edge inboard WBL 470, outboard WBL 834
- Point S on the outboard engine is not on NAC BL 0.0
- All dimensions, cm (in)

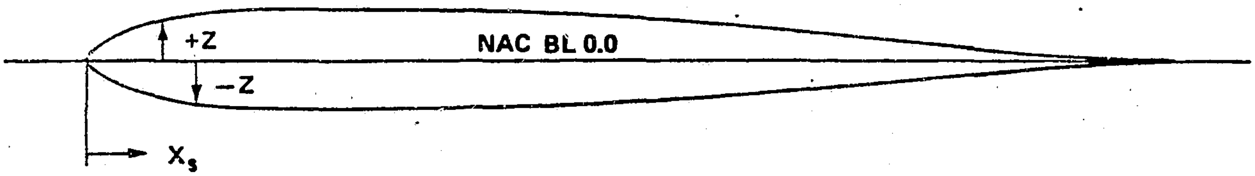
Engine	$\overline{RS}$	$\overline{ST}$	$\overline{H}$	T
Inboard (No. 3)	242.11 (95.32)	102.92 (40.52)	32.66 (12.86)	NAC STA 216.12 NAC WL 192.86 NAC BL 0.0
Outboard (No. 4)	225.45 (88.76)	94.13 (37.06)	22.86 (9.00)	NAC STA 216.10 NAC WL 189.00 NAC BL 0.0

Figure 9. Nacelle Coordinate System

125394-453

ORIGINAL PAGE IS
OF POOR QUALITY

Table 2. Engine 3 Pylon Coordinates



NAC WL 155 C_s = 735.43cm (289.54 in)

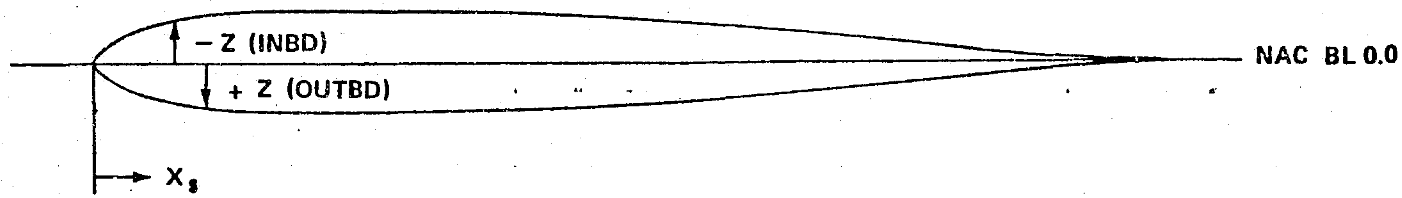
$\frac{X_s}{C_s}$	$\frac{\pm Z}{C_s}$
0.0	0.0
0.0163	0.01160
0.0336	0.01596
0.0508	0.01889
0.0681	0.02110
0.1199	0.02549
0.2063	0.03046
0.3099	0.03447
0.3962	0.03658
0.4826	0.03768
0.5344	0.03785
0.5689	0.03782
0.6725	0.03271
0.7589	0.02601
0.8970	0.01140
1.0	0.0

NAC WL 180 C_s = 722.91cm (284.61 in)

$\frac{X_s}{C_s}$	$\frac{\pm Z}{C_s}$
0.0	0.0
0.0155	0.01511
0.0330	0.02161
0.0506	0.02582
0.0857	0.03380
0.1033	0.03672
0.1209	0.03925
0.1560	0.04343
0.2087	0.04778
0.2614	0.05035
0.2966	0.05109
0.3493	0.05119
0.4722	0.05035
0.5074	0.04887
0.6479	0.03738
0.7885	0.02245
1.0	0.0

125209-24-173

Table 3. *Engine 4 Pylon Coordinates*



NAC WL 155 C_s = 684.30cm (269.41 in)

$\frac{X_s}{C_s}$	$\frac{\pm Z}{C_s}$
0.0	0.0
0.0361	0.01715
0.0546	0.02030
0.0732	0.02268
0.1289	0.02739
0.2217	0.03274
0.3330	0.03704
0.4258	0.03931
0.5186	0.04050
0.6300	0.03890
0.6671	0.03615
0.7228	0.03062
0.8156	0.02153
0.8898	0.01344
1.0	0.0

NAC WL 180 C_s = 608.46cm (239.55 in)

$\frac{X_s}{C_s}$	$\frac{+Z}{C_s}$	$\frac{-Z}{C_s}$
0.0	-0.01536	0.01536
0.0458	0.02150	0.03515
0.0666	0.02818	0.03707
0.0875	0.03323	0.03903
0.1084	0.03720	0.04099
0.1501	0.04396	0.04513
0.1710	0.04671	0.04721
0.2754	0.05677	0.05677
0.3380	0.05982	0.05982
0.3797	0.06070	0.06070
0.5884	0.04959	0.04959
0.6302	0.04483	0.04483
0.8180	0.02204	0.02204
0.9642	0.00434	0.00434
0.9999	0.0	0.0

ORIGINAL PAGE IS OF POOR QUALITY

125209-24-174

water line (NAC WL) planes, which are perpendicular to the NAC BL 0.0 plane and pitched up to 2 deg relative to the WRP.

The proper orientation of each NAC WL plane containing the coordinates in tables 2 and 3 is achieved by first locating the reference NAC WL T plane (fig. 9) which passes through the wing leading edge at WBL 470/834. The leading-edge point may be located relative to the WRP by using coordinates given in table 1. This reference NAC WL corresponds to NAC WL 192.86 for the inboard engine and NAC WL 189.00 for the outboard engine. Coordinates defining the pylon cross-sectional profile are given for both engine pylons at NAC WL 155 and NAC WL 180. These NAC WLs can be located from the reference NAC WL for each engine (fig. 9).

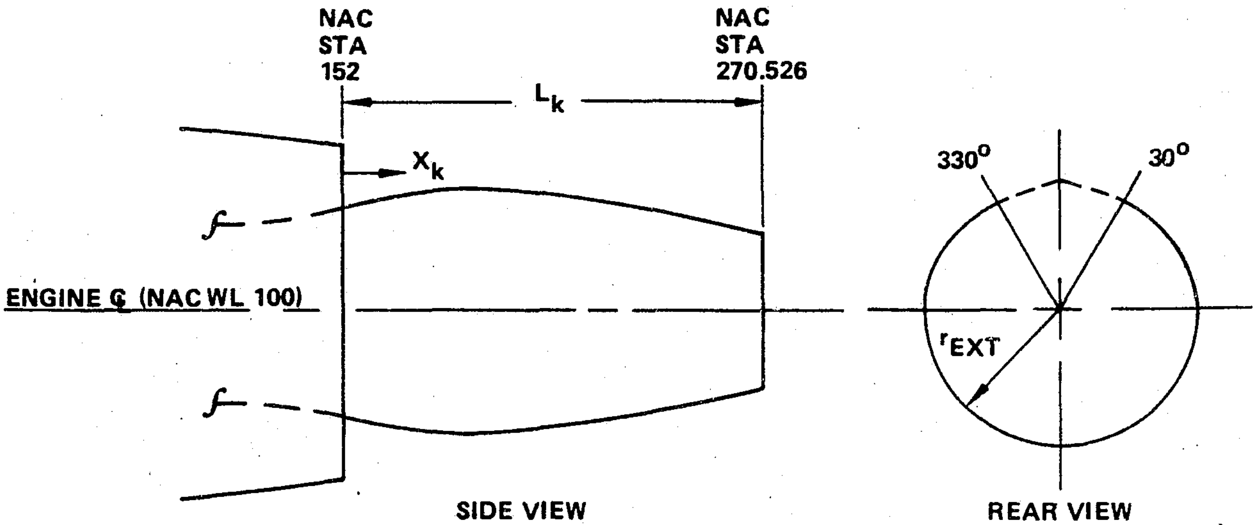
Each nacelle coordinate system is an isolated coordinate system. To provide for the proper position of each engine NAC WL relative to the other, the reference NAC WL plane must be positioned to account for the difference in elevation between the inboard and outboard engine installations due to WRP dihedral.

The fore and aft positions of NAC WL 155 and 180 profiles on each pylon are found by locating a reference nacelle station (NAC STA) passing through the wing leading-edge point at WBL 470 (inboard) or WBL 834 (outboard). Lines representing NAC STA are perpendicular to the intersection of a NAC WL plane and NAC BL 0.0 plane; distances between NAC STA are measured parallel to the intersection. At point T, the NAC STA reference for the inboard pylon is 216.12; for the outboard pylon, 206.10 (fig. 9).

The outboard pylon pressure port row at NAC WL 180 has an unsymmetric profile (table 3). The contour of the fairing at WBL 834 shifts the pylon leading edge to the inboard side of NAC BL 0.0.

The inlet, fan cowl, and core cowl surface geometries are the same on both engines. Each engine centerline is coincident with NAC WL 100. The core cowl is a body of revolution between 30 and 330 deg (table 4). This cowl is defined by radii measured from NAC WL 100 at points between NAC STA 152 and NAC STA 270.526. The inlet and fan cowl profiles are given along constant inlet angles measured about the inlet centerline, which lies in the NAC BL 0.0 plane, pitched down (drooped) 4 deg relative to the engine centerline at NAC STA 97.23 (fig. 9). The fan inlet cross-sectional profile coordinates (table 5) are measured along and perpendicular to the inlet axis for five circumferential

Table 4. Engines 3 and 4 Core Cowl Coordinates

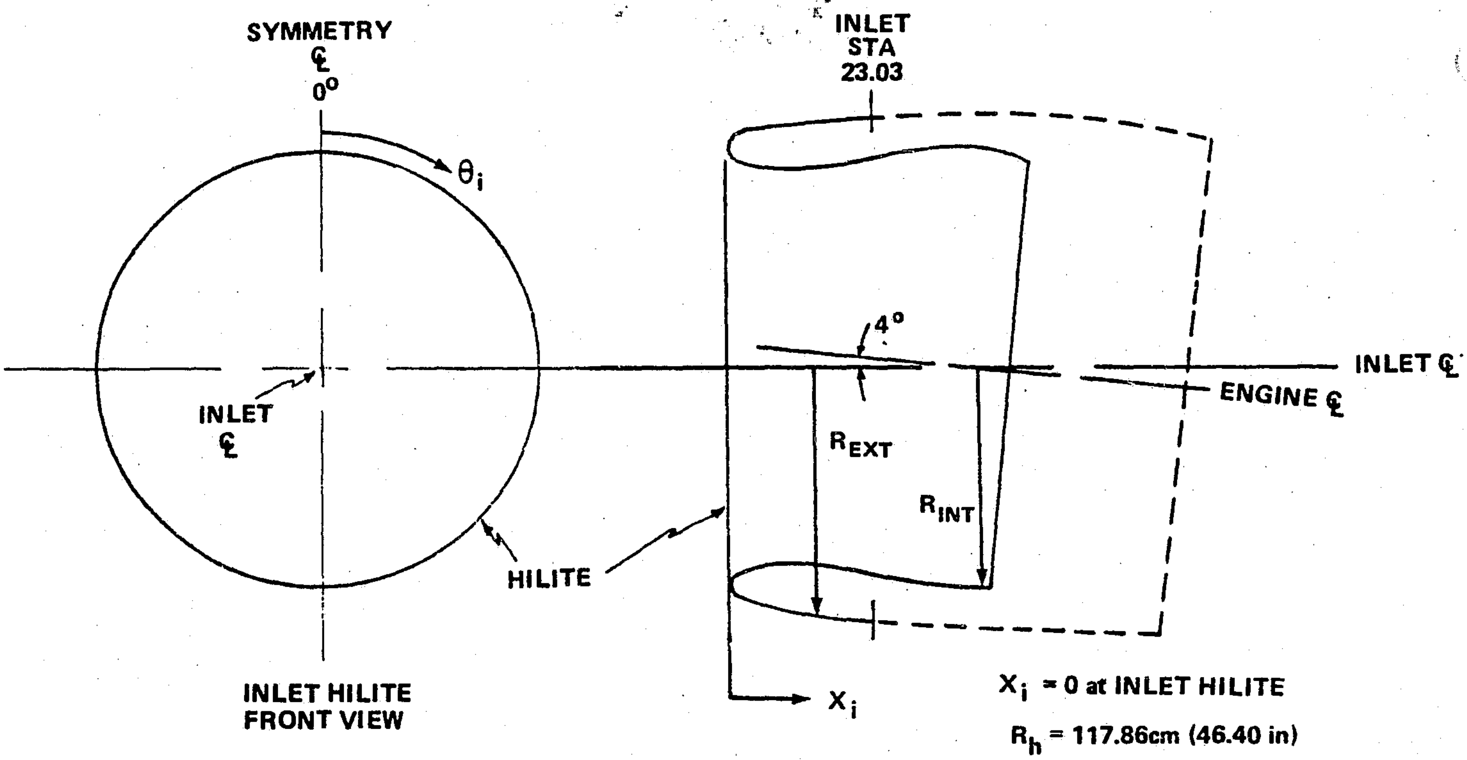


$X_k = 0$ at NAC STA 152, L_k = 301.07 cm (118.53 in)

X_k/L_k	r_{EXT}/L_k	X_k/L_k	r_{EXT}/L_k
0.0	0.2867	0.6834	0.2602
0.0338	0.2858	0.6918	0.2592
0.1519	0.2829	0.7003	0.2582
0.2362	0.2811	0.7425	0.2528
0.2953	0.2799	0.7762	0.2481
0.3797	0.2782	0.8100	0.2429
0.4472	0.2764	0.8353	0.2388
0.4978	0.2746	0.8690	0.2329
0.5315	0.2708	0.9028	0.2267
0.5653	0.2696	0.9196	0.2235
0.5822	0.2697	0.9534	0.2168
0.6243	0.2696	0.9956	0.2080
0.6497	0.2638	1.0000	0.2070

125209-26-179

Table 5. Engines 3 and 4 Inlet Coordinates



$\theta_i = 30$

X_i/R_h	R_{EXT}/R_h	R_{INT}/R_h
0.2651		0.8957
0.1853		0.8991
0.1196		0.9094
0.0776		0.9217
0.0302		0.9461
0.0037		0.9786
0.0	1.0000	1.0000
0.0069	1.0158	
0.0248	1.0303	
0.0647	1.0493	
0.1379	1.0714	
0.2155	1.0877	
0.3448	1.1061	
0.4963	1.1200	

$\theta_i = 60$

X_i/R_h	R_{EXT}/R_h	R_{INT}/R_h
1.2874		1.0000
1.1222		1.0072
0.7813		0.9546
0.5563		0.9158
0.4019		0.8998
0.2651		0.8957
0.1196		0.9094
0.0302		0.9461
0.0	1.0000	1.0000
0.0647	1.0493	
0.1379	1.0714	
0.3448	1.1061	
0.4963	1.1200	

125209-24-175

Table 5. Engines 3 and 4 Inlet Coordinates (Concluded)

$\theta_i = 90$		
X_i/R_h	R_{EXT}/R_h	R_{INT}/R_h
0.2651		0.8957
0.1853		0.8991
0.1196		0.9094
0.0776		0.9217
0.0302		0.9461
0.0037		0.9786
0.0	1.0000	1.0000
0.0069	1.0158	
0.0248	1.0303	
0.0647	1.0493	
0.1379	1.0714	
0.2155	1.0877	
0.3448	1.1061	
0.4963	1.1200	

$\theta_i = 150$		
X_i/R_h	R_{EXT}/R_h	R_{INT}/R_h
0.2651		0.8957
0.1853		0.9004
0.1196		0.9126
0.0776		0.9261
0.0302		0.9518
0.0037		0.9829
0.0	1.0000	1.0000
0.0069	1.0158	
0.0248	1.0303	
0.0647	1.0493	
0.1379	1.0714	
0.2155	1.0877	
0.3448	1.1061	
0.4963	1.1200	

$\theta_i = 180$		
X_i/R_h	R_{EXT}/R_h	R_{INT}/R_h
1.1822		1.0044
1.1222		1.0072
0.7813		0.9546
0.5563		0.9158
0.4019		0.8998
0.2651		0.8957
0.1196		0.9126
0.0302		0.9518
0.0	1.0000	1.0000
0.0647	1.0493	
0.1379	1.0714	
0.3448	1.1061	
0.4963	1.1200	

125209-24-176

angles measured about the inlet centerline. At these same inlet angles, the fan cowl cross-sectional profiles are defined relative to the engine centerline. Coordinates in table 6 give the angle about the engine centerline for each point with the distance to the surface measured along and perpendicular to NAC WL 100.

Pylon-fan cowl, pylon-core cowl, and wing-pylon intersections are defined along axes of the nacelle coordinate system (tables 7 through 10). These tables include the information necessary to locate these intersections. The pylon-core cowl intersection is separated into three sections between NAC STA 220 and 270.526 to define a pylon-core cowl fairing surface (table 10).

The pressure orifice positions on the defined profiles are given in tables 11 through 16. A pressure orifice is found in the profile plane at the intersection of the aircraft surface and a line normal to the X direction at the nondimensional position given by X/C or X/L.

4.1.2 Instrumentation

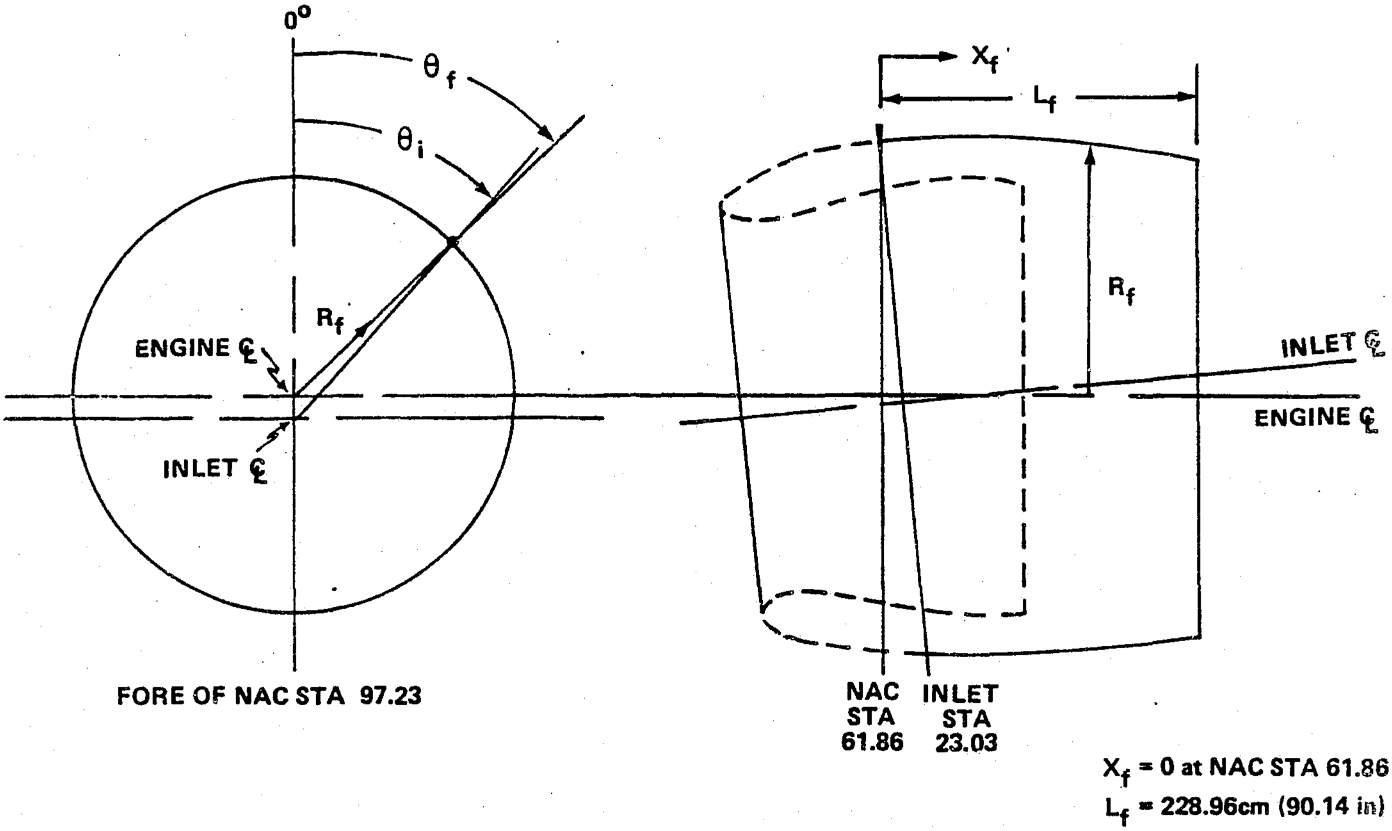
The NAIL program was an ambitious undertaking in terms of number of measurements obtained. There were 693 pressure measurements, 30 accelerometers, 7 rate gyros, 12 blade clearance measurements, and 20 thermocouples for required test data. Numerous thermocouples were used to provide temperature information on heat-sensitive instrumentation. Finally, expanded engine performance data were provided by an additional 68 measurement channels. The quantity and quality of the data obtained were excellent.

Instrumentation placed on or near the numbers 3 and 4 engine and pylon was designed to further the understanding of the flight loads (cause) and engine clearance changes (effect) associated with engine deterioration and to provide information on the flight environment of the engine and wing interface.

4.1.2.1 Flight Loads

Pressure Instrumentation—Most of the pressure instrumentation was placed on the inlet of engine 3 (figs. 10 and 11). It was believed that the inboard engine was subject to higher angles of attack than the outboard engine because wing bending reduced the incidence of the outboard nacelle and because the outboard nacelle was less affected by upflow induced by the wing flaps. Therefore, the inboard nacelle sustained greater loads and was chosen for a more detailed survey using 252 pressure taps.

Table 6. Engines 3 and 4 Fan Cowl Coordinates



$\theta_i = 30$

θ_f	X_f/L_f	R_f/L_f
31.356	0.0	0.5540
30.928	0.1125	0.5663
30.568	0.2123	0.5732
29.975	0.3821	0.5771
29.261	0.5851	0.5675
28.483	0.7892	0.5447
28.168	0.8669	0.5358
27.579	1.0000	0.5148

$\theta_i = 60$

θ_f	X_f/L_f	R_f/L_f
62.262	0.0147	0.5641
61.634	0.1125	0.5727
60.020	0.2123	0.5781
60.001	0.3821	0.5802
55.843	1.0000	0.5148

Table 6. Engines 3 and 4 Fan Cowl Coordinates (Concluded)

$\theta_i = 90$		
θ_f	$\frac{X_f}{L_f}$	$\frac{R_f}{L_f}$
92.483	0.0349	0.5771
91.929	0.1125	0.5816
91.234	0.2123	0.5846
90.071	0.3821	0.5835
88.642	0.5851	0.5685
87.080	0.7892	0.5446
86.449	0.8669	0.5358
85.265	1.0000	0.5148

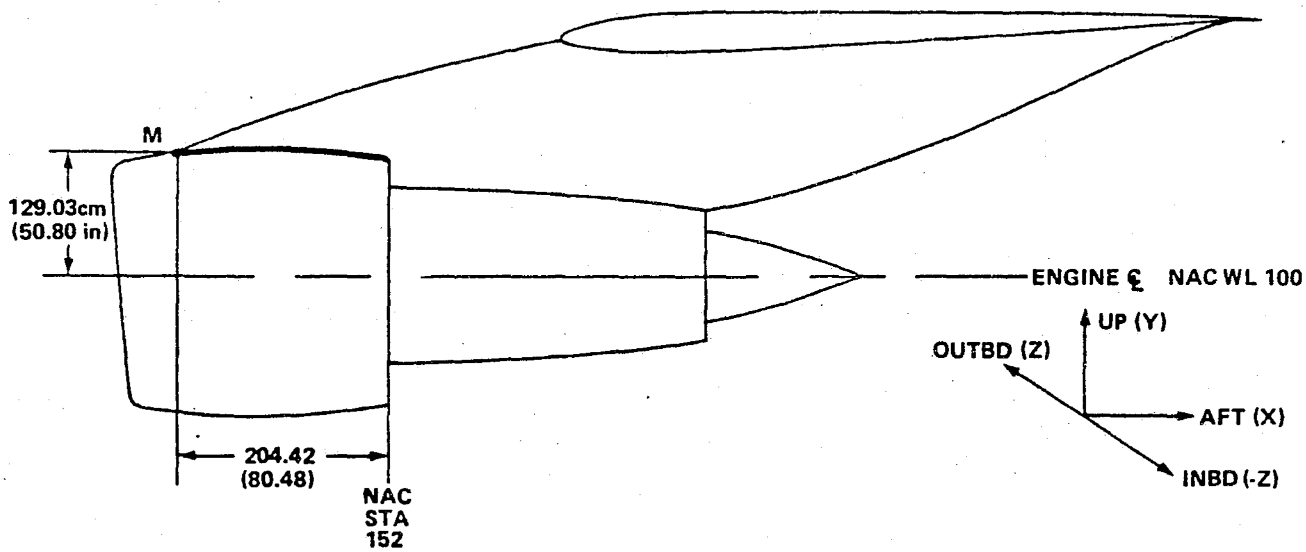
$\theta_i = 150$		
θ_f	$\frac{X_f}{L_f}$	$\frac{R_f}{L_f}$
151.141	0.0697	0.5973
150.997	0.1125	0.5974
150.665	0.2123	0.5957
150.096	0.3821	0.5865
149.383	0.5851	0.5687
148.603	0.7892	0.5446
148.289	0.8669	0.5358
147.700	1.0000	0.5148

$\theta_i = 180$		
θ_f	$\frac{X_f}{L_f}$	$\frac{R_f}{L_f}$
180.000	0.0771	0.6001
180.000	0.1125	0.6000
180.000	0.2123	0.5975
180.000	0.3821	0.5867
180.000	1.0000	0.5148

125209-26-178

ORIGINAL PAGE IS
OF POOR QUALITY

Table 7. Engines 3 and 4 Pylon-Fan Cowl Intersection



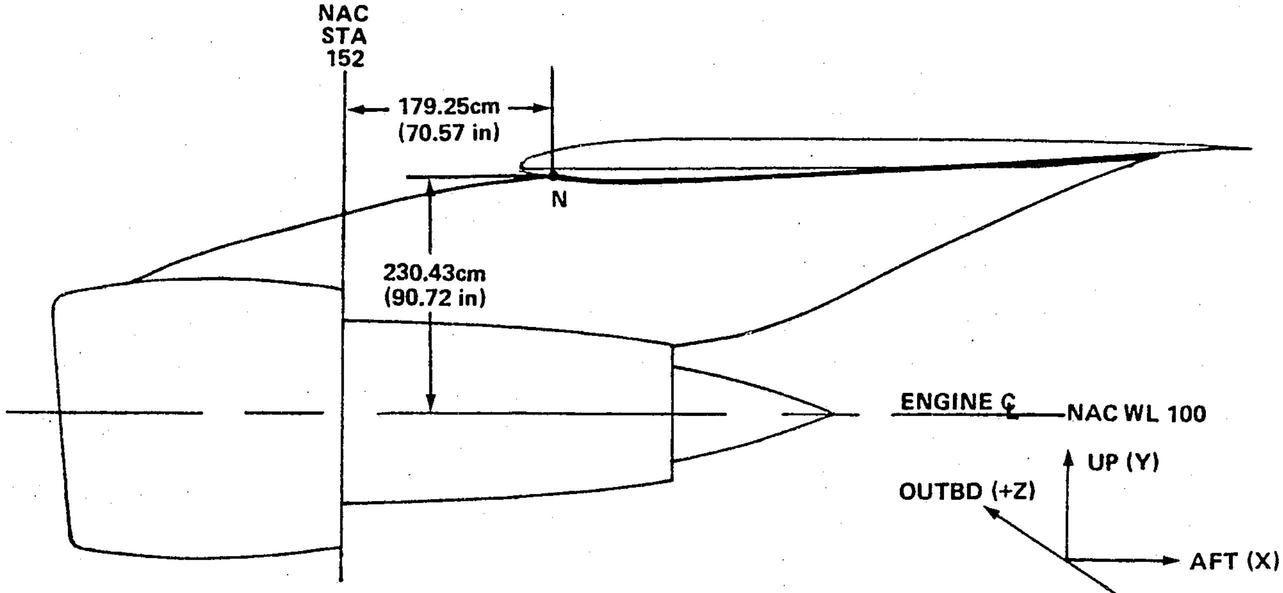
C_m = 206.080 cm (81.134 in) X, Y = 0 @ m Z = 0 @ NAC BL 0

X/C_m	Y/C_m	$\pm Z/C_m$
0.0	0.0	0.0
0.1661	0.00801	0.0620
0.2894	0.00900	0.0779
0.4127	0.00579	0.0886
0.5359	-0.00345	0.0959
0.6715	-0.02305	0.1019
0.8437	-0.04055	0.1071
0.9919	-0.06471	0.1090

125209-26-181

ORIGINAL PAGE IS
OF POOR QUALITY

Table 8. Engine 3 Wing-Pylon Intersection



C_n = 74.407cm (29.294 in)   X,Y = 0 @ N   Z = 0 @ NACBL 0

OUTBOARD

X/C_n	Y/C_n	Z/C_n
0.0000	-0.0751	0.0000
0.0075	-0.0297	0.0051
0.0553	0.0703	0.0133
0.1167	0.1369	0.0167
0.2195	0.2123	0.0181
0.3304	0.2762	0.0171
0.4909	0.3451	0.0133
0.6923	0.4117	0.0068
1.0077	0.4813	-0.0038
1.8171	0.5455	-0.0324
4.5412	0.4772	-0.0922
5.3294	0.4120	-0.0802
6.1500	0.3400	-0.0485
6.9789	0.2748	0.0024
8.0122	0.2014	0.0830
8.9315	0.1359	0.1648
9.5572	0.0679	0.2284
10.0000	0.0000	0.2745

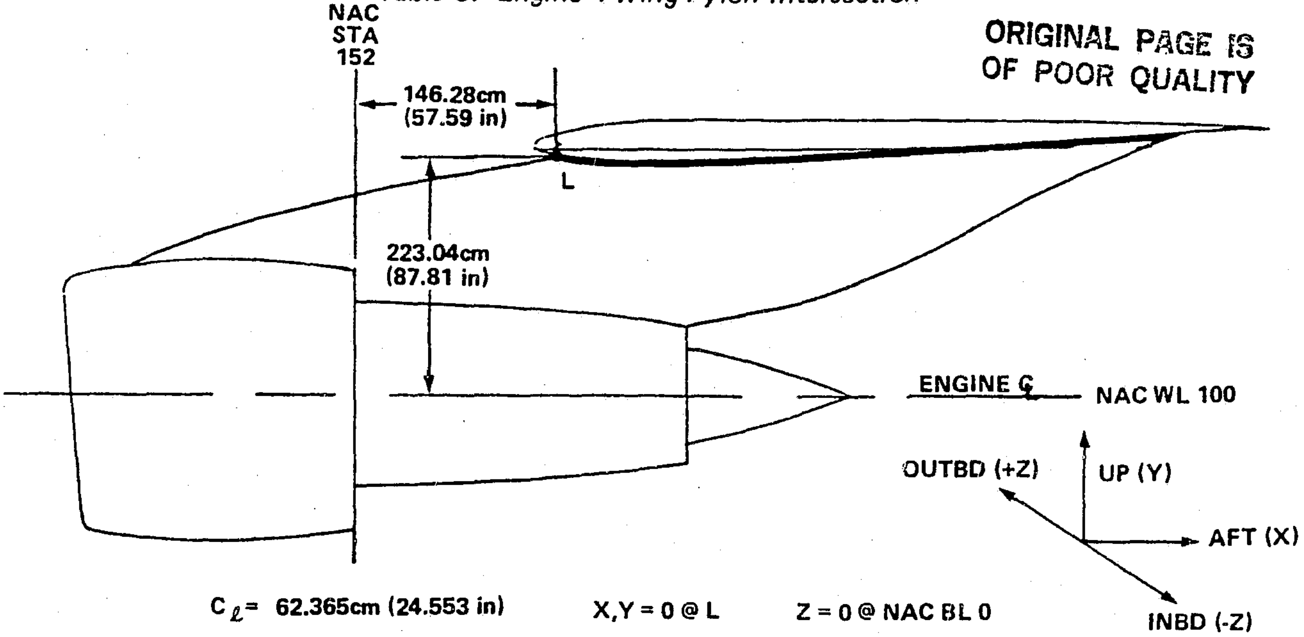
INBOARD

X/C_n	Y/C_n	Z/C_n
0.0000	-0.0751	0.0000
0.0109	-0.1375	-0.0089
0.0536	-0.2048	-0.0205
0.1403	-0.2751	-0.0348
0.2823	-0.3458	-0.0509
0.4909	-0.4120	-0.0690
0.8462	-0.4793	-0.0915
1.7044	-0.5318	-0.1260
3.5137	-0.5179	-0.1526
4.2818	-0.4803	-0.1417
5.2533	-0.4100	-0.1048
6.0623	-0.3441	-0.0608
6.9789	-0.2758	0.0048
8.0122	-0.2038	0.0884
8.9315	-0.1379	0.1703
9.5572	-0.0690	0.2311
10.000	0.0000	0.2745

125209-26-182

Table 9. *Engine 4 Wing-Pylon Intersection*

ORIGINAL PAGE IS
OF POOR QUALITY



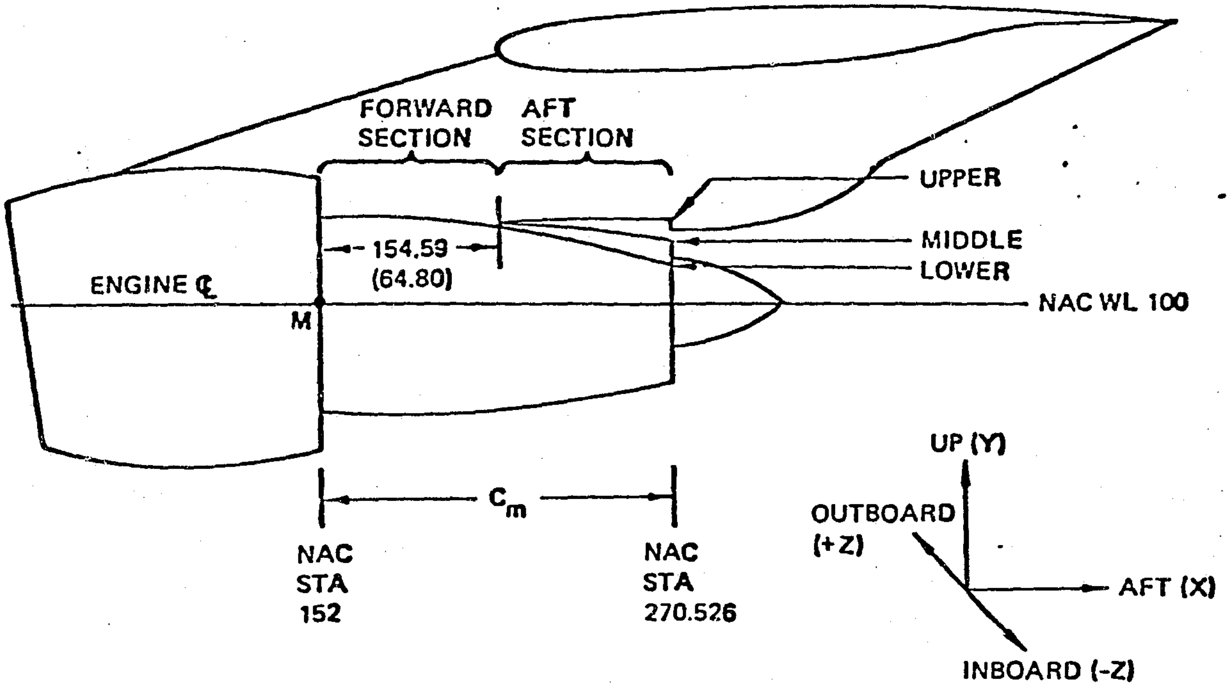
C_ℓ = 62.365cm (24.553 in) X,Y = 0 @ L Z = 0 @ NAC BL 0

OUTBOARD			INBOARD		
X/C_ℓ	Y/C_ℓ	Z/C_ℓ	X/C_ℓ	Y/C_ℓ	Z/C_ℓ
0.0000	-0.0411	0.0000	0.0000	-0.0411	0.0000
0.0049	0.0000	0.0024	0.0053	-0.0819	-0.0029
0.0468	0.0855	0.0065	0.0525	-0.1637	-0.0090
0.1275	0.1654	0.0086	0.1592	-0.2484	-0.0171
0.2366	0.2342	0.0094	0.3063	-0.3234	-0.0261
0.4411	0.3275	0.0081	0.5441	-0.4085	-0.0383
0.6920	0.4114	0.0049	0.8590	-0.4863	-0.0521
1.0048	0.4891	-0.0004	1.4096	-0.5698	-0.0729
1.5318	0.5747	-0.0118	2.5093	-0.6256	-0.0949
2.5910	0.6337	-0.0391	3.8724	-0.5735	-0.0644
3.5804	0.5967	-0.0546	4.9143	-0.4863	-0.0069
4.0138	0.5653	-0.0509	5.6588	-0.4134	0.0452
4.8597	0.4883	-0.0216	6.5813	-0.3258	0.1197
5.6588	0.4077	-0.0269	7.5038	-0.2391	0.1959
6.4273	0.3340	0.0863	8.2727	-0.1666	0.2598
7.3498	0.2484	0.1682	9.1952	-0.0823	0.3364
8.2727	0.1637	0.2501	9.9943	-0.0053	0.4032
9.1952	0.0786	0.3319			
10.0000	0.0045	0.4036			

125209-26-183

Table 10. Pylon-Core Cowl Intersection (To Be Submitted in Final Report)

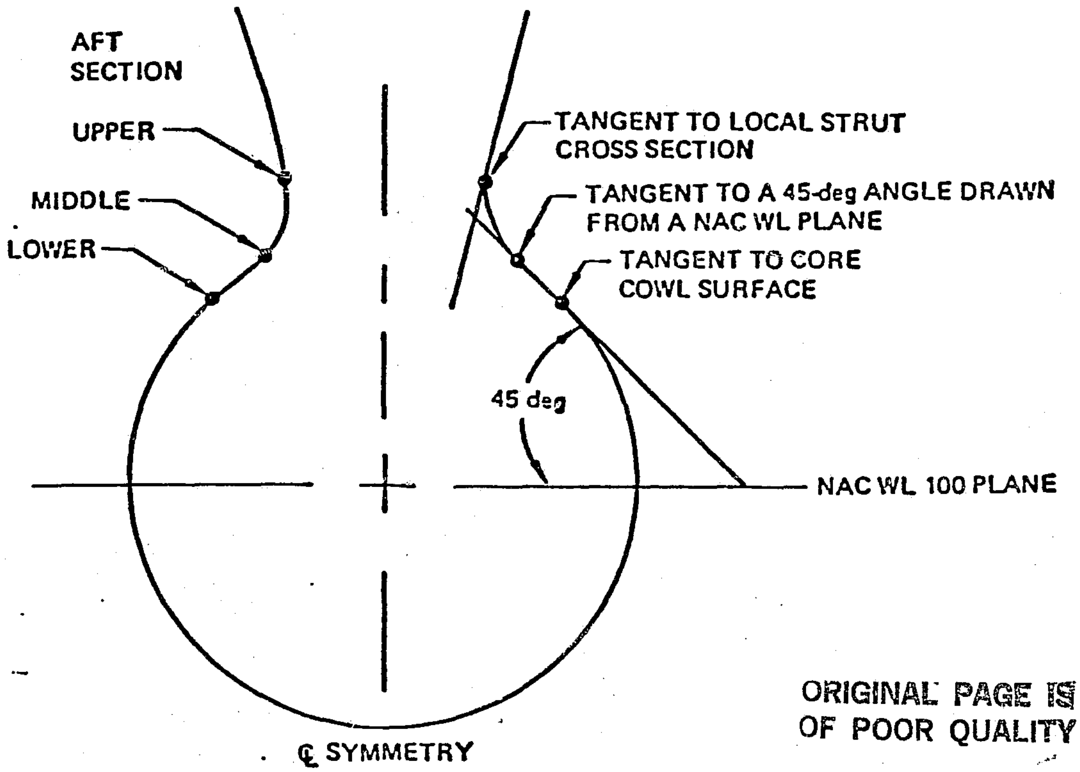
Table 10. Pylon-Core Cowl Intersection



C_m = 301.056 cm (118.526 in) X, Y = 0 at M Z = 0 at NAC BL 0

FORWARD SECTION		
X_m/C_m	Y_m/C_m	$\pm Z_m/C_m$
0.0000	0.2797	0.0636
0.0377	0.2786	0.0638
0.0697	0.2780	0.0640
0.1336	0.2773	0.0643
0.1976	0.2771	0.0647
0.2296	0.2771	0.0649
0.2935	0.2771	0.0651
0.3575	0.2770	0.0653
0.3894	0.2769	0.0653
0.4454	0.2764	0.0653
0.4909	0.2754	0.0650
0.5402	0.2738	0.0631

Table 10. Pylon-Core Cowl Intersection (Concluded)



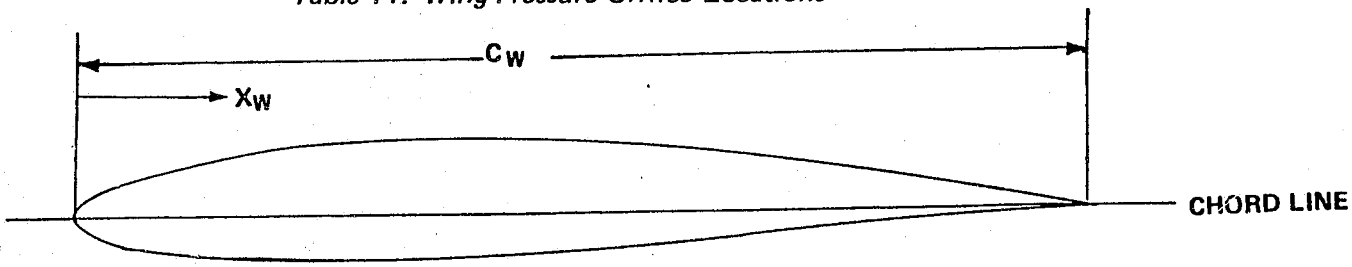
ORIGINAL PAGE IS
OF POOR QUALITY

TYPICAL CROSS SECTION IN AFT SECTION
OF STRUT-CORE COWL INTERSECTION

C_m = 301.056 cm (118.526 in) X, Y = 0 at M Z = 0 at NAC BL 0

AFT SECTION						
UPPER			MIDDLE		LOWER	
X_m/C_m	Y_m/C_m	$\pm Z_m/C_m$	Y_m/C_m	$\pm Z_m/C_m$	Y_m/C_m	$\pm Z_m/C_m$
0.5737	0.2775	0.0621	0.2724	0.0639	0.2685	0.0709
0.6159	0.2834	0.0604	0.2696	0.0657	0.2618	0.0782
0.6581	0.2895	0.0582	0.2652	0.0672	0.2551	0.0827
0.7003	0.2955	0.0555	0.2594	0.0683	0.2484	0.0849
0.7159	0.2972	0.0543	0.2574	0.0681	0.2459	0.0851
0.7333	0.2980	0.0534	0.2550	0.0676	0.2432	0.0854
0.7425	0.2985	0.0532	0.2540	0.0672	0.2418	0.0852
0.7846	0.2939	0.0495	0.2480	0.0641	0.2348	0.0837
0.8268	0.2887	0.0458	0.2415	0.0597	0.2284	0.0807
0.8690	0.2786	0.0475	0.2349	0.0540	0.2218	0.0756
0.9112	0.2663	0.0354	0.2276	0.0473	0.2151	0.0690
0.9534	0.2542	0.0300	0.2194	0.0405	0.2082	0.0611
0.9956	0.2410	0.0247	0.2109	0.0337	0.2012	0.0528
1.0000	0.2394	0.0240	0.2096	0.0332	0.2013	0.0485

Table 11. Wing Pressure Orifice Locations



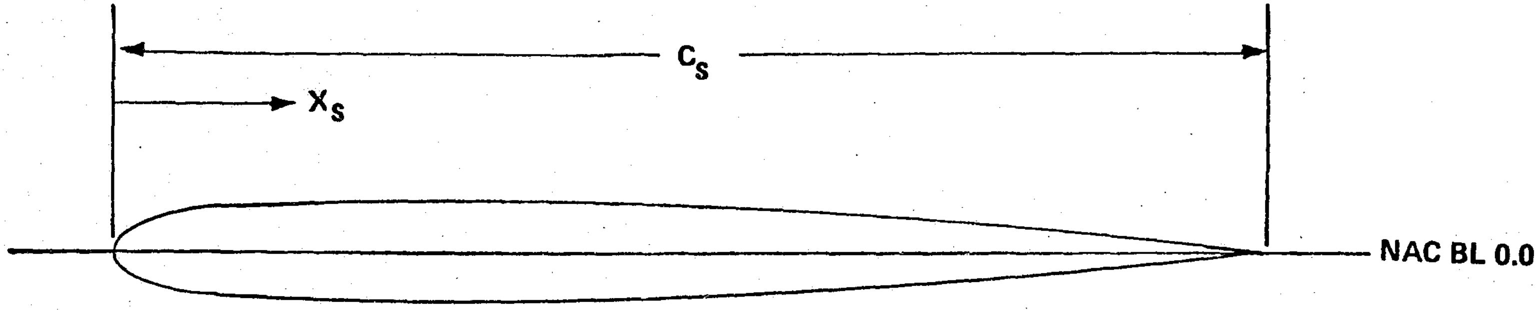
X MEASURED ALONG CHORD LINE
X_W/C_W TOLERANCE ±0.0005

WBL 445		WBL 470	WBL 510		WBL 809		WBL 834	WBL 870	
Xw/Cw		Xw/Cw	Xw/Cw		Xw/Cw		Xw/Cw	Xw/Cw	
UPPER	LOWER	UPPER	UPPER	LOWER	UPPER	LOWER	UPPER	UPPER	LOWER
FLUSH	FLUSH	FLUSH	FLUSH	FLUSH	FLUSH	FLUSH	FLUSH	FLUSH	FLUSH
0.0100	0.0090	0.1090	0.0100	0.0100	0.0100	0.0100	0.1200	0.0100	0.0089
0.0200	0.0223		0.0200	0.0207	0.0190	0.0165		0.0200	0.0189
0.0300	0.0300	BELT	0.0300	0.0300	0.0300	0.0300	BELT	0.0300	0.0284
0.0500	0.0487	0.2000	0.0500	0.0500	0.0500	0.0500	0.2405	0.0500	0.0489
0.0750	0.1000	0.3000	0.0750	0.1000	0.0750	0.1015	0.3000	0.0734	0.0723
0.1000	0.1500	0.4000	0.1000	0.1472	0.1000	0.1500	0.4000	0.1000	0.1000
0.1500		0.5000	0.1500		0.1500		0.5000	0.1500	0.1500
BELT	BELT	0.6000	BELT	BELT	BELT	BELT	0.6000	BELT	BELT
0.2000	0.1950		0.2000	0.1972	0.2000	0.2000		0.2000	0.2043
0.2250	0.2453		0.2250	0.2472	0.2250	0.2500		0.2250	0.2543
0.2500	0.2953		0.2500	0.2972	0.2466	0.3000		0.2500	0.3043
0.2750	0.3453		0.2750	0.3472	0.3000	0.3500		0.3000	0.3543
0.3043	0.3953		0.3000	0.3972	0.3500	0.4000		0.3500	0.4043
0.3543	0.4454		0.3500	0.4472	0.4000	0.4500		0.4000	0.4543
0.4037	0.4954		0.4000	0.4972	0.4500	0.5000		0.4500	0.5043
0.4538	0.5455		0.4500	0.5472	0.5000	0.5500		0.4750	0.5543
0.4750	0.5955		0.4750	0.5972	0.5250	0.6000		0.5000	0.6043
0.5060	0.6455		0.5000	0.6472	0.5500	0.6500		0.5250	0.6543
0.5250			0.5200		0.6000			0.5500	
0.5554			0.5500		0.6500			0.6000	
0.6049			0.6000		0.7000			0.6500	
0.6551			0.6500		0.7500			0.7000	
0.7049			0.7000		0.8000				
0.7552									
0.8049									

ORIGINAL PAGE IS OF POOR QUALITY

125209-26-184

Table 12. Engine 3 Pylon Pressure Orifice Locations

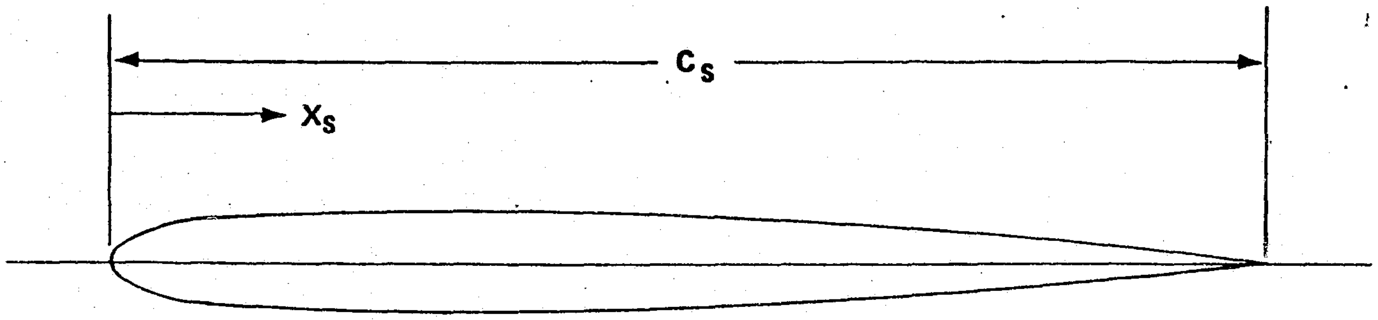


X MEASURED ALONG NAC BL 0.0
X_S/C_S TOLERANCE ±0.0005

NAC WL 155	NAC WL 180
X_S / C_S	X_S / C_S
INBD AND OUTBD	INBD AND OUTBD
0.0163	0.0169
0.0349	0.0330
0.0508	0.0506
0.0750	0.0752
0.1234	0.9898
0.2146	0.1279
0.3043	0.1600
0.3938	0.2136
0.4865	0.2614
0.5392	0.2966
0.5724	0.3493
0.6207	0.4757
0.6725	0.6514
0.7589	0.7885
0.8279	
0.9005	

125209-27-185

Table 13. Engine 4 Pylon Pressure Orifice Locations



X MEASURED ALONG NAC BL 0.0

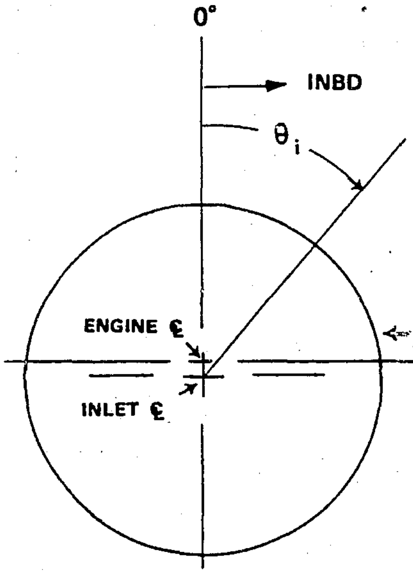
X_S/C_S TOLERANCE ±0.0005

NAC WL 180 X_S / C_S INBD AND OUTBD	NAC WL 155 X_S / C_S INBD AND OUTBD
0.0175	0.0474
0.0375	0.0666
0.0546	0.0875
0.0806	0.1092
0.1326	0.1460
0.2306	0.1793
0.3321	0.2169
0.4295	0.2837
0.5229	0.3371
0.5762	0.3785
0.6237	0.4423
0.6671	0.5901
0.7228	0.8158
0.8156	0.9641
0.8898	
0.9677	

125209-27-186

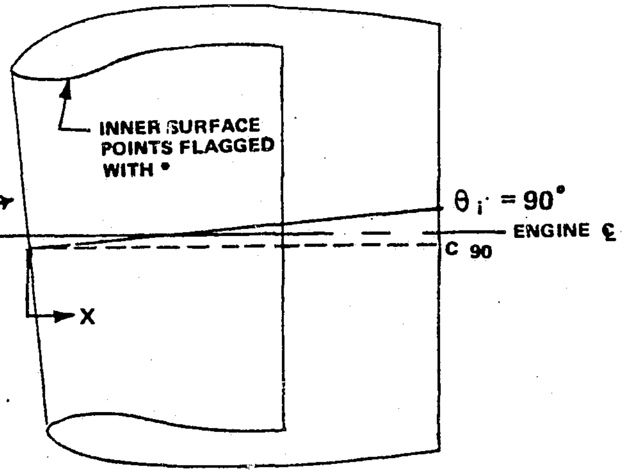
ORIGINAL PAGE IS
OF POOR QUALITY

Table 14. Engine 3 Inlet Pressure Orifice Locations



INLET HILITE—FRONT VIEW

$C_{30} = C_{330} = 286.46$ cm (112.78 in)
$C_{90} = C_{270} = 279.32$ cm (109.97 in.)
$C_{150} = C_{210} = 272.21$ cm (107.17 in.)



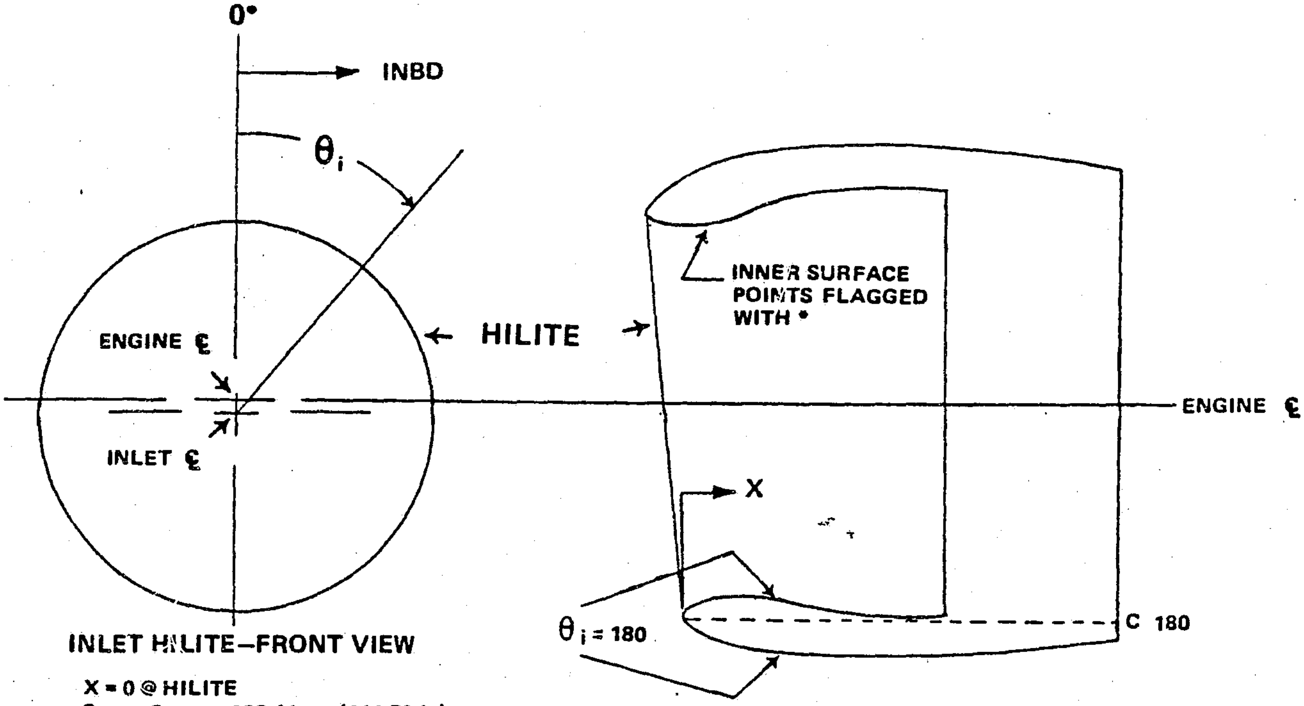
X = 0 @ HILITE

X/C TOLERANCE ±0.003

$\theta_i = 30°$	$\theta_i = 90°$	$\theta_i = 150°$	$\theta_i = 210°$	$\theta_i = 270°$	$\theta_i = 330°$
X/C	X/C	X/C	X/C	X/C	X/C
0.079*	0.077*	0.080*	0.080*	0.081*	0.079*
0.051*	0.053*	0.050*	0.050*	0.055*	0.051*
0.034*	0.033*	0.034*	0.034*	0.037*	0.034*
0.014*	0.014*	0.014*	0.014*	0.014*	0.014*
0.002*	0.002*	0.002*	0.002*	0.002*	0.002*
0.000	0.000	0.000	0.000	0.000	0.000
0.004	0.004	0.005	0.005	0.004	0.004
0.010	0.011	0.012	0.012	0.011	0.010
0.025	0.028	0.030	0.030	0.028	0.026
0.056	0.061	0.063	0.062	0.062	0.056
0.086	0.091	0.095	0.095	0.090	0.086
0.122	0.128	0.146	0.146	0.128	0.122
0.168	0.174	0.183	0.181	0.172	0.178
0.212	0.227	0.227	0.224	0.218	0.214
0.261	0.277	0.277	0.275	0.267	0.262
0.336	0.348	0.345	0.343	0.339	0.337
0.457	0.463	0.458	0.455	0.453	0.454
0.572	0.576	0.571	0.569	0.567	0.570
0.645	0.647	0.639	0.639	0.639	0.645
0.718	0719	0.710	0.708	0.711	0.718
0.824	0.824	0.813	0.810	0.816	0.827
0.994	0.997	0.994	0.991	0.990	0.994

125209-27-187

Table 15. Engine 4 Inlet Pressure Orifice Locations



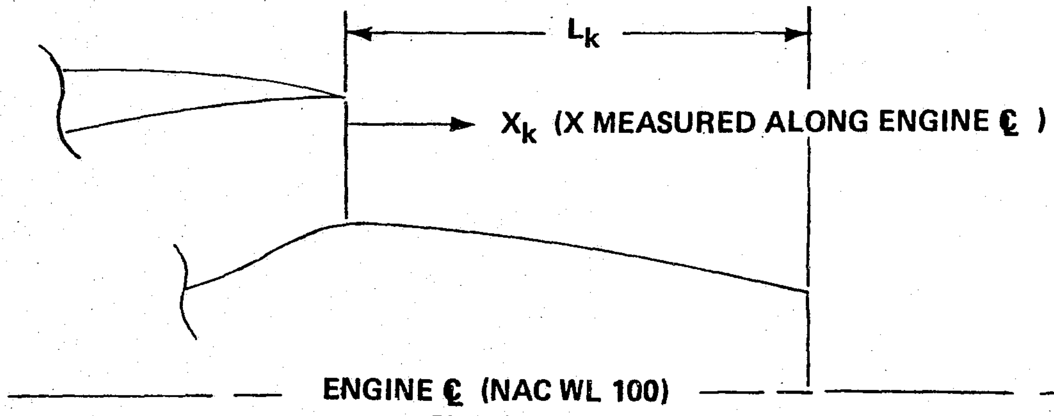
X = 0 @ HILITE
$C_{60} = C_{300}$ = 283.44 cm (111.59 in)
C_{180} = 271.11 cm (106.74 in)

X/C TOLERANCE ±0.003

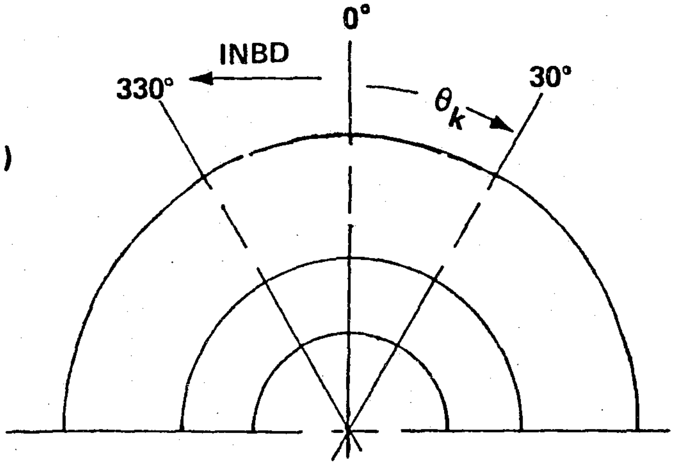
θ_i = 60°	θ_i = 180°	θ_i = 300°
X / C	X / C	X / C
0.441*	0.426*	0.424*
0.322*	0.318*	0.322*
0.232*	0.244*	0.228*
0.167*	0.178*	0.164*
0.104*	0.107*	0.101*
0.050*	0.052*	0.048*
0.021*	0.021*	0.021*
0.000	0.000	0.000
0.026	0.064	0.027
0.060	0.098	0.057
0.125	0.135	0.125
0.170	0.178	0.171
0.263	0.272	0.264
0.327	0.345	0.330
0.432	0.455	0.434

125209-27-188

Table 16. Engine 3 and 4 Core Cowl Pressure Orifice Locations



SIDE VIEW

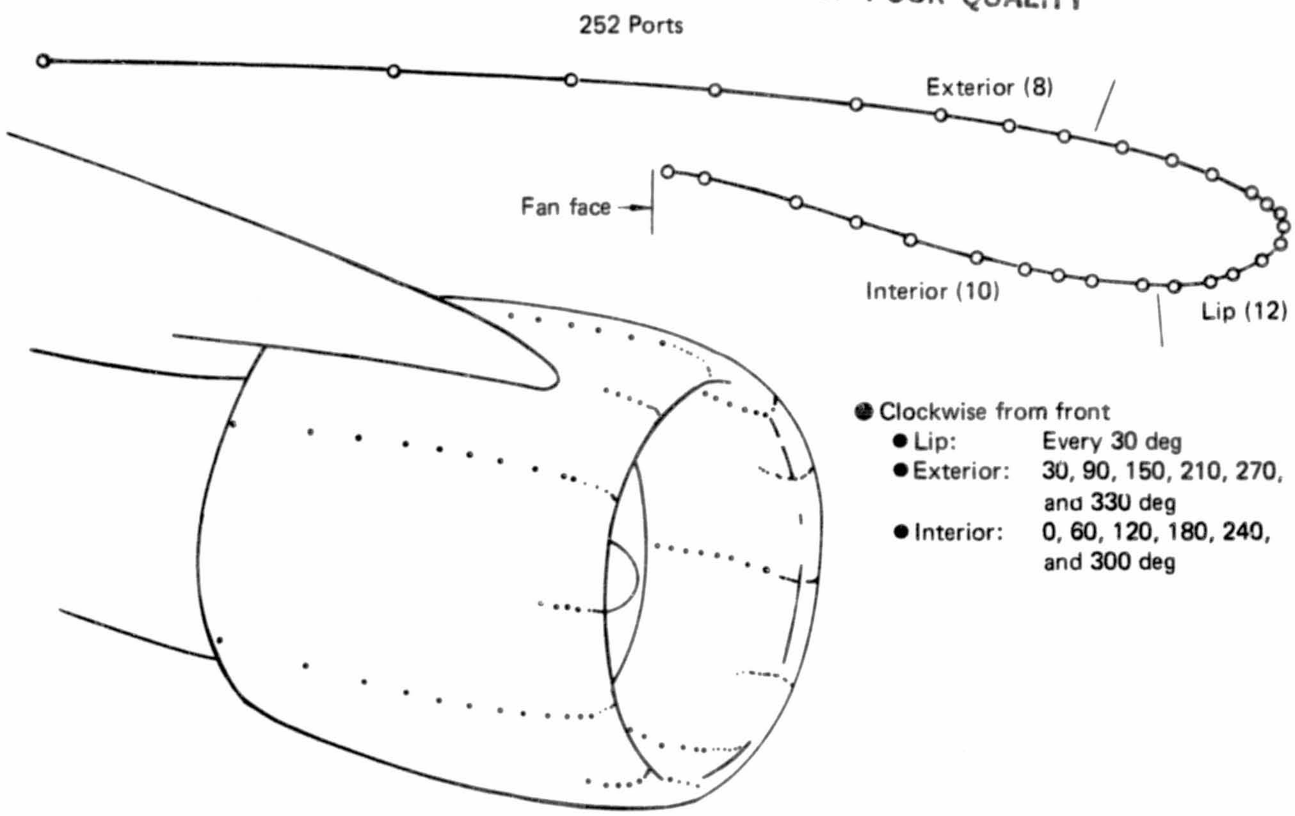


CORE COWL
REAR VIEW

θ_k = 30° AND 330°	
X_k/L_k ±0.0007	
0.0363	0.6817
0.1552	0.6918
0.2405	0.7024
0.2928	0.7410
0.3797	0.7745
0.4472	0.8085
0.4995	0.8380
0.5315	0.8672
0.5703	0.9010
0.5822	0.9205
0.6277	0.9545
0.6497	0.9947

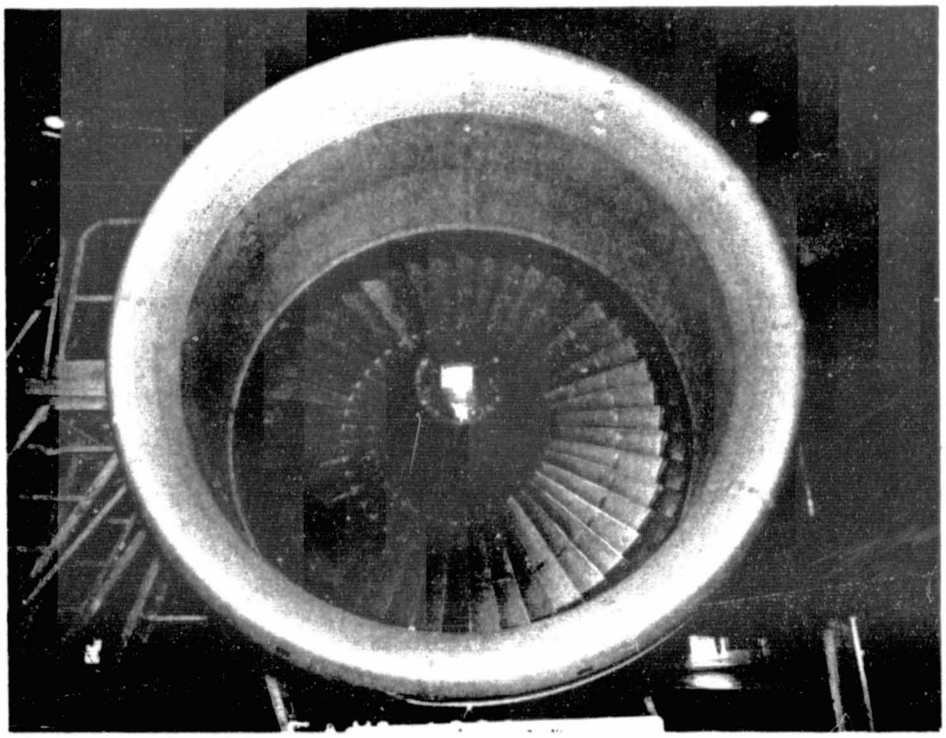
ORIGINAL PAGE IS
OF POOR QUALITY

125209-27-189



125209-5

Figure 10. Inboard Engine Pressure Taps



125209-6

Figure 11. Inboard Inlet Pressure Taps

The greatest deviations from ambient pressure and most rapid variations of pressure with distance occur near the inlet lip. Contribution of the lip area to the overall force and moment is very large. Because of this contribution, 144 taps in 12 rows, 30 deg apart, were located in the lip area. Aft of the lip, 60-deg circumferential spacing of the rows provided adequate definition.

Each pressure tap was connected to an Endevco pressure transducer (fig. 12) by approximately 8 ft of 0.061-in inside diameter copper tubing to ensure that lag effects were equalized. The transducers were mounted in temperature controlled boxes in groups of 22 (figs. 13 and 14). Each transducer measured differential pressure between the tap and a reference pressure.

Further pressure measurements were obtained on the fan cowl doors of engine 3 (fig. 15). The arrangement was two rows of pressure taps, one on each side of both cowl doors, 30 deg from the top. Each pressure tap was connected to its individual transducer by copper tubing except at the hinges of the fan cowl doors, where a small section of copper tubing was replaced by a piece of flexible clear polymer. This flexible section enabled the doors to function throughout the test program.

The pressure instrumentation on engine 4 was designed to substantiate a finding of the feasibility study (ref. 1), which suggested that engine deterioration was independent of position. Therefore, engine 4 inlet was instrumented with three rows of 15 pressure taps each spaced 120 deg apart (fig. 16) for a total of 45 measurements. These measurements were sufficient to indicate relative load levels between inboard and outboard inlets.

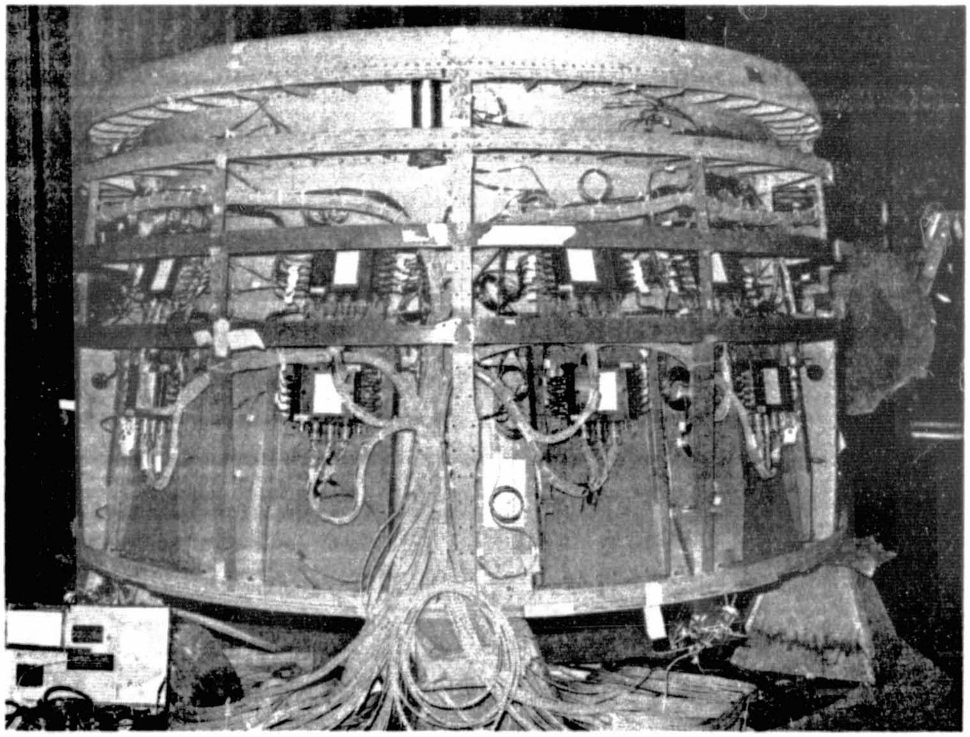
Inertial Loads Instrumentation—Instrumentation for inertial loads consisted of accelerometers and rate gyros located on the engine and pylon (fig. 17) and the aircraft center of gravity. Linear accelerations were measured by Q-FLEX accelerometers (fig. 18). These instruments were used on both test engines and at their fore and aft wing and pylon interface. For angular accelerations two axes of a three-axis Northrop rate gyro mounted on the two test engines (figs. 19 and 20) were used.

Location of accelerometers and rate gyros is referenced by clock position, looking aft. Accelerometers were placed on the engines so that lateral accelerations were measured in the lateral direction at NAC STA 46 at 3 o'clock and at NAC STA 100 at 6 o'clock. Vertical accelerations were measured at NAC STA 46 at 6 o'clock, NAC STA 100 at

ORIGINAL PAGE IS
OF POOR QUALITY

125209-7

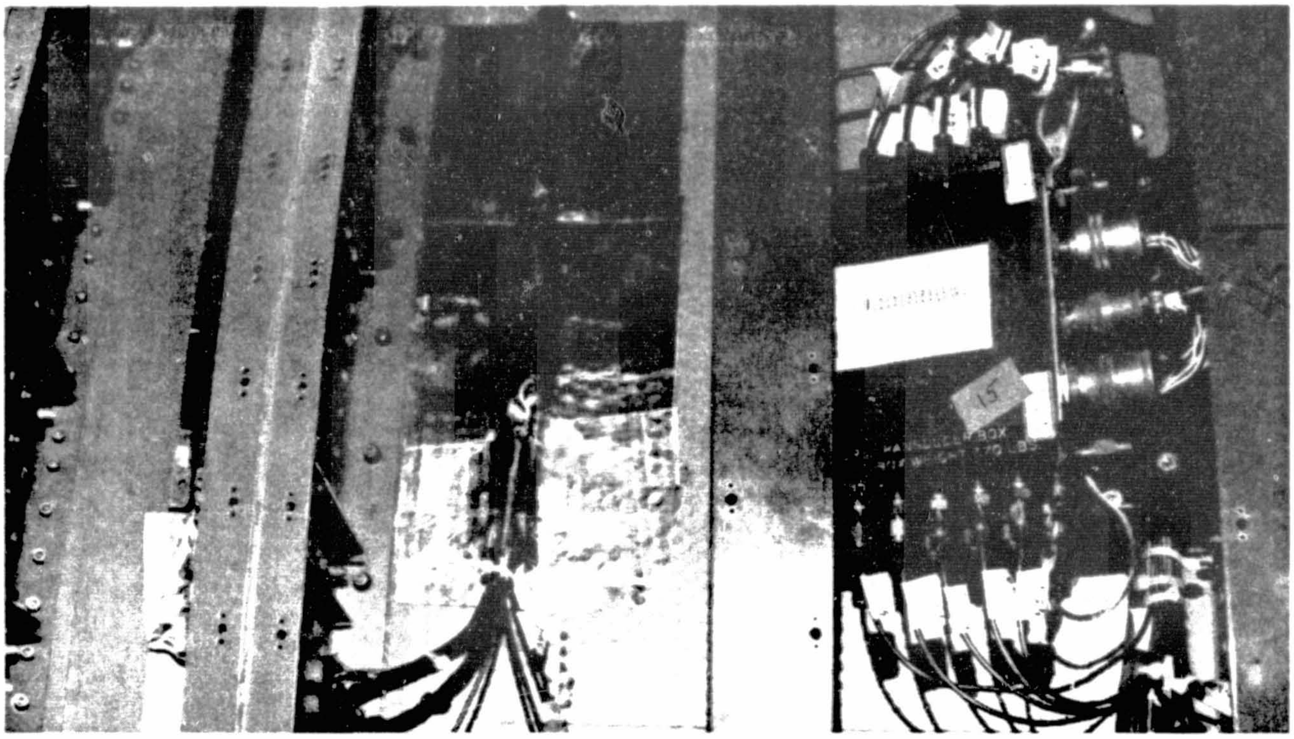
Figure 12. Pressure Transducer



125209-8

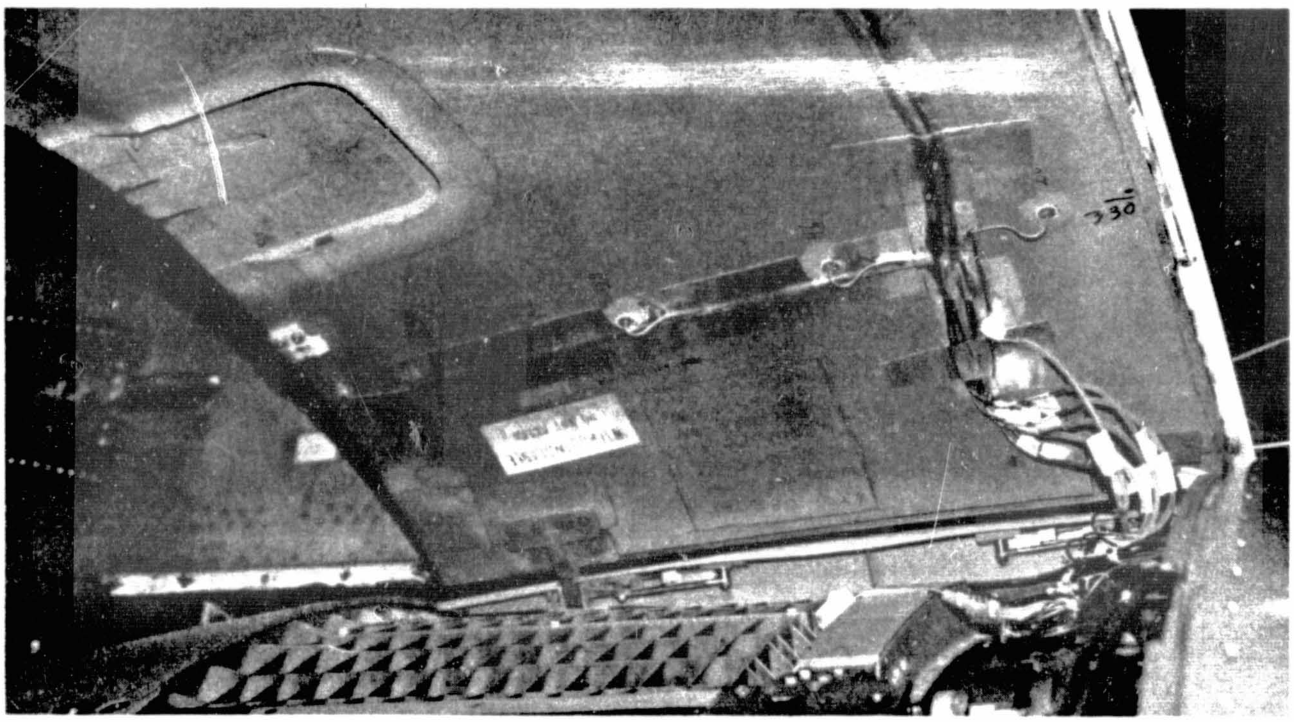
Figure 13. Pressure Transducer Installation

ORIGINAL PAGE
BLACK AND WHITE PHOTOGRAPH



125209-9

Figure 14. Pressure Transducer Box



125209-10

Figure 15. Cowl Door Pressure Taps

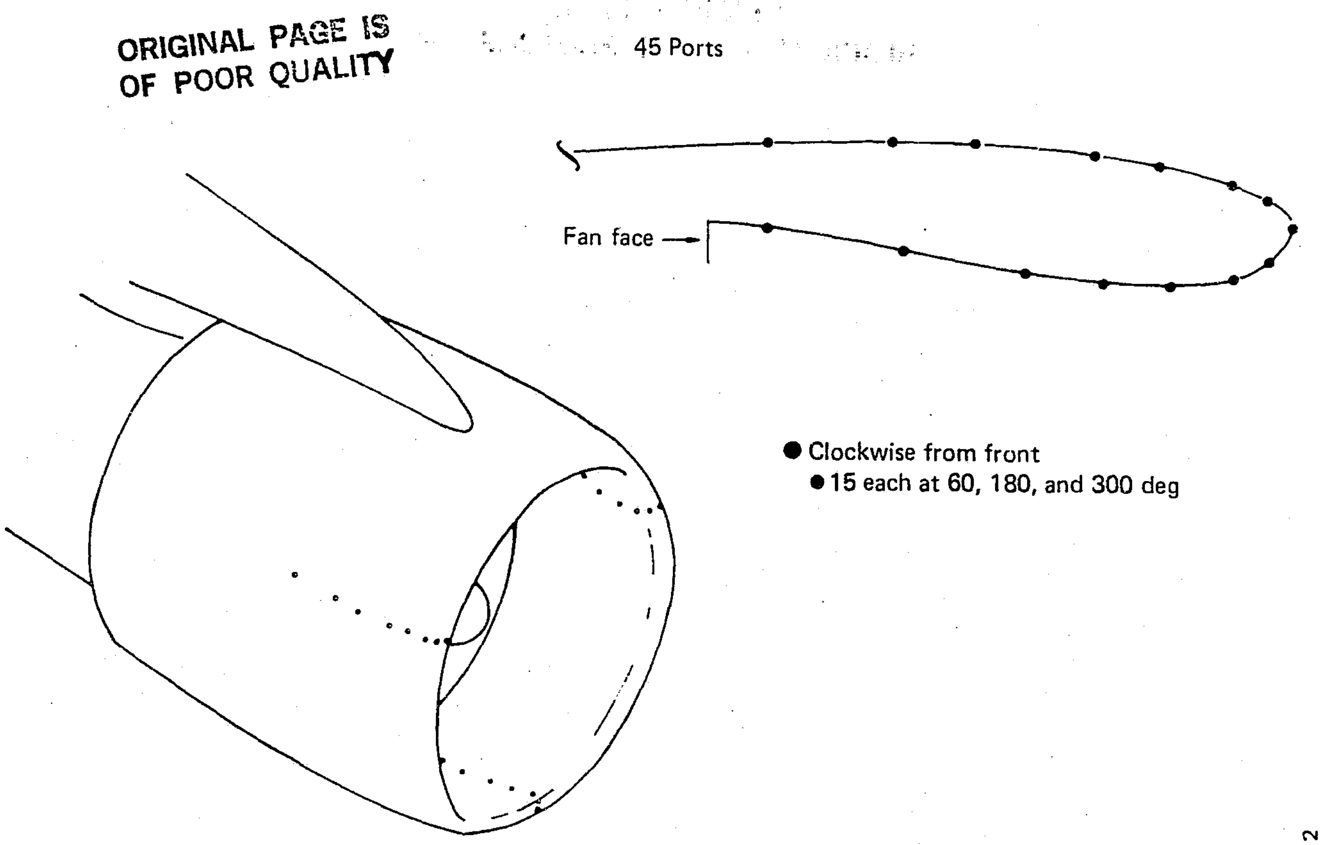


Figure 16. Outboard Engine Pressure Taps

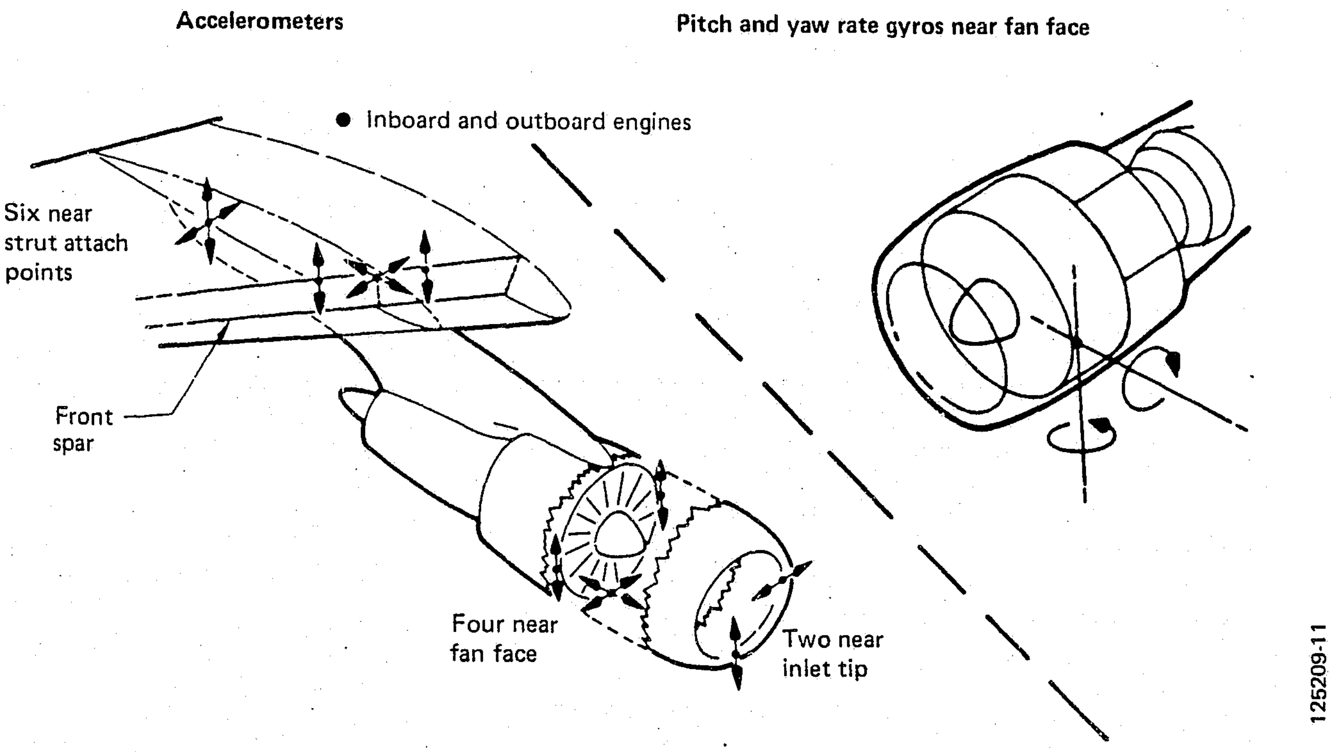
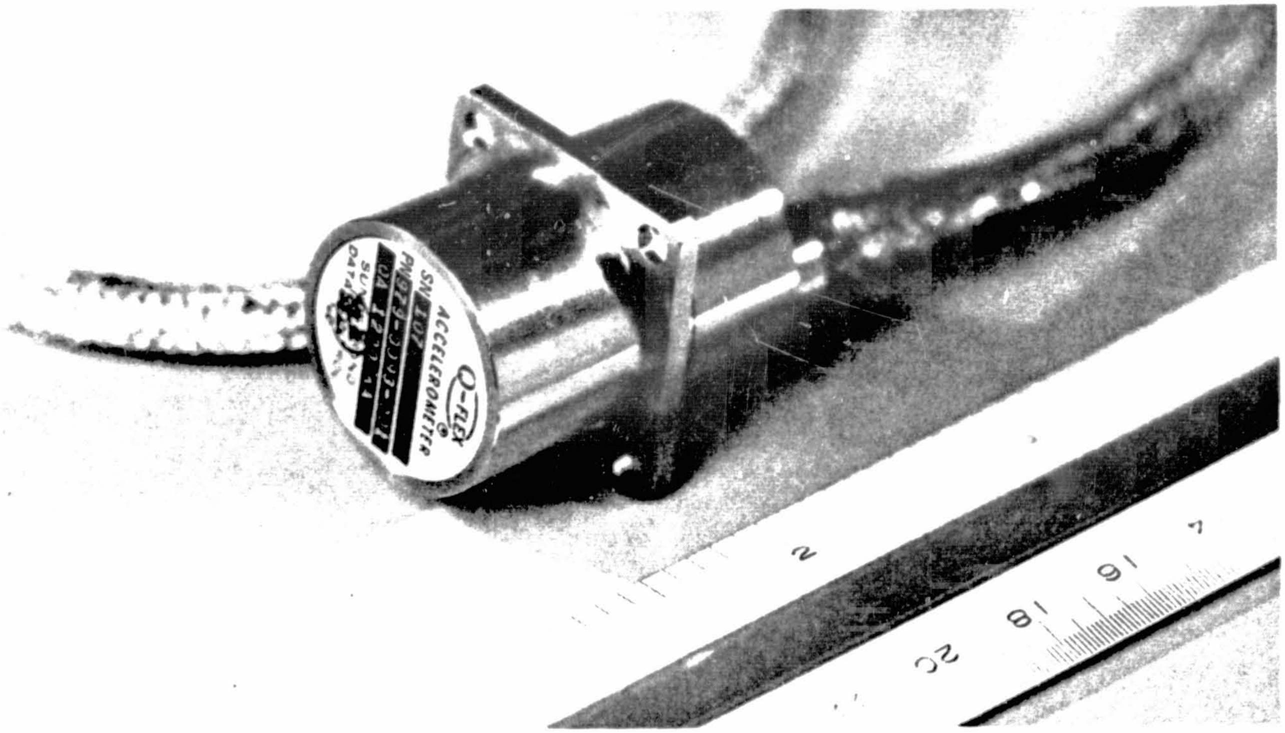


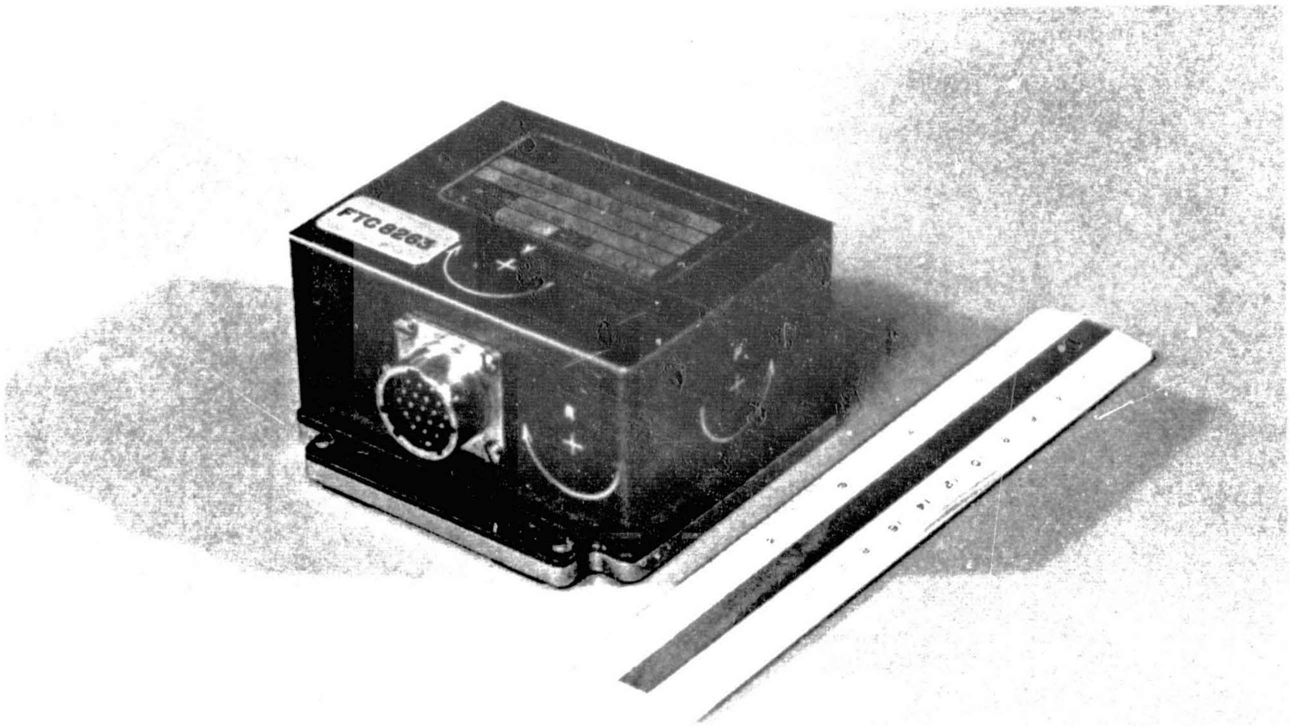
Figure 17. Inertial Data Sensors

ORIGINAL PAGE
BLACK AND WHITE PHOTOGRAPH



125209-13

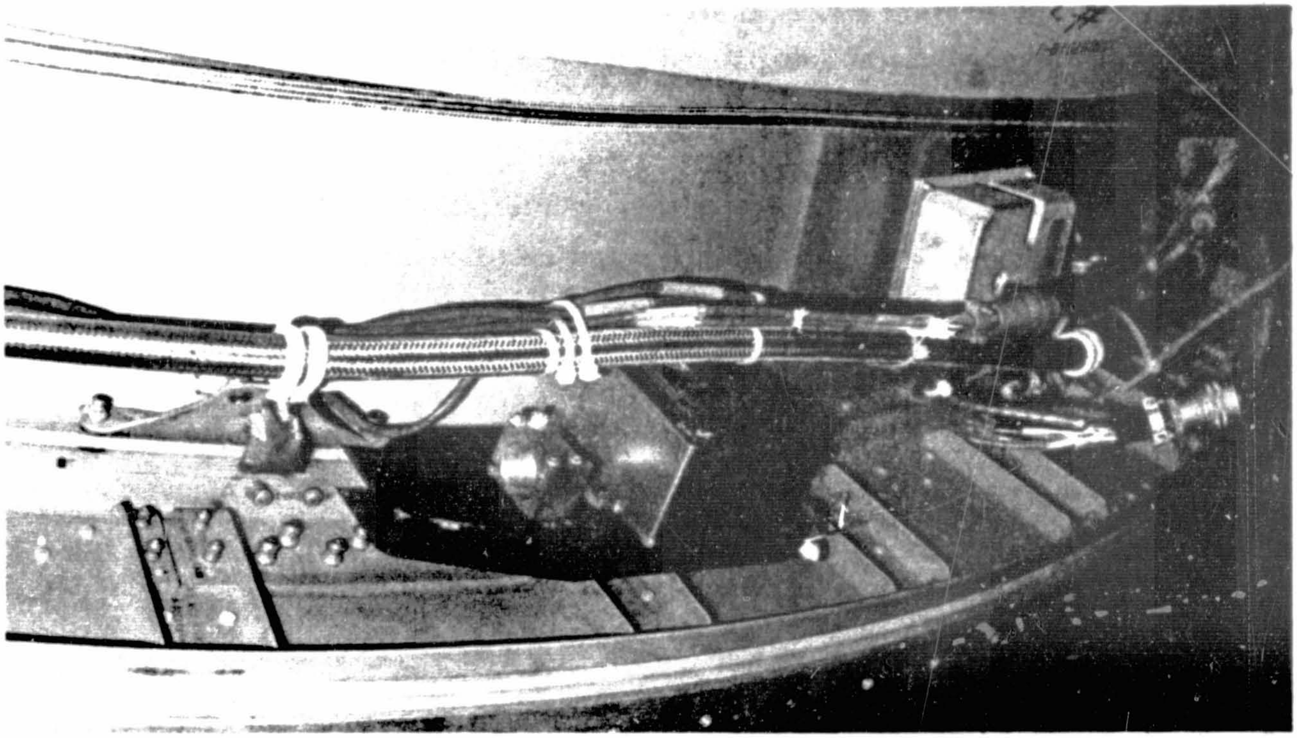
Figure 18. Q-FLEX Accelerometer



126209-16

Figure 19. Rate Gyro

ORIGINAL PAGE
BLACK AND WHITE PHOTOGRAPH



125209-17

Figure 20. Accelerometer and Rate Gyro

the lateral direction at NAC STA 46 at 3 o'clock and at NAC STA 100 at 6 o'clock. Vertical accelerations were measured at NAC STA 46 at 6 o'clock, NAC STA 100 at 3 o'clock, and NAC STA 100 at 9 o'clock, and longitudinal acceleration was at NAC STA 100 at 6 o'clock. Rate gyros were placed at NAC STA 100 at 3 o'clock and were used to measure pitch and yaw rate. A total of six accelerometers and one rate gyro per engine permitted calculation of the translational and angular accelerations at the engine center of gravity.

Accelerations were also measured at the pylon/wing interfaces. The lateral accelerations were measured at the wing front spar and the rear thrust link attach point (fig. 21). The vertical accelerations were measured inboard and outboard of the front spar attach point and on the rear thrust link attach point. In the longitudinal direction, accelerations were measured only at the front spar. Each interface had a total of six linear accelerometers.

Basic airplane information was also recorded, including pitch, yaw, and roll angles, along with side-slip and angle of attack. Angular accelerations about all three axes were measured at the aircraft center of gravity.

Clearance Measurement System—Engine clearance change measurements were made by P&WA simultaneously with flight load application. Measurements were made on the fan and first-stage high-pressure turbine on the inboard engine and the fan stage of the outboard engine by a laser proximity system for each stage. Each clearance monitoring system consisted of: (1) the laser assembly (four lasers per box), (2) the input fiber optic assembly, (3) video camera assembly, (4) laser probe assembly (four probes per stage), (5) video monitor, and (6) video tape recorder (fig. 22).

In accordance with the interface agreement between the two companies, P&WA provided all clearance monitoring system components and made the necessary engine preparations. Operation and maintenance of the system during testing were also the responsibility of P&WA. P&WA provided to BCAC the equipment necessary for installation in the airplane during the layup period prior to testing.

Laser assemblies were installed in a rack inside the airplane cabin (fig. 23). Four laser assemblies of four laser generators per box were installed in the rack, which provided one spare box to facilitate changeover in flight should a laser generator malfunction.

ORIGINAL PAGE
BLACK AND WHITE PHOTOGRAPH

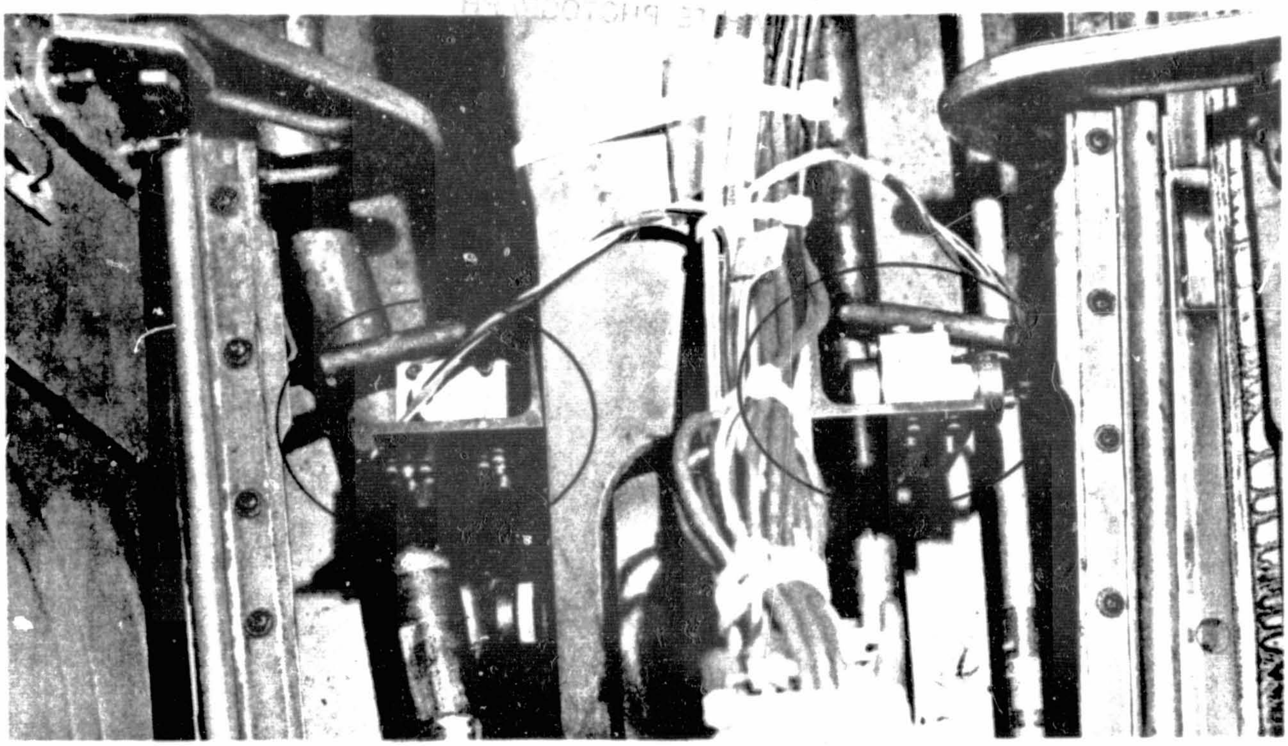


Figure 21. Acceleron Installation (Thrust Link)

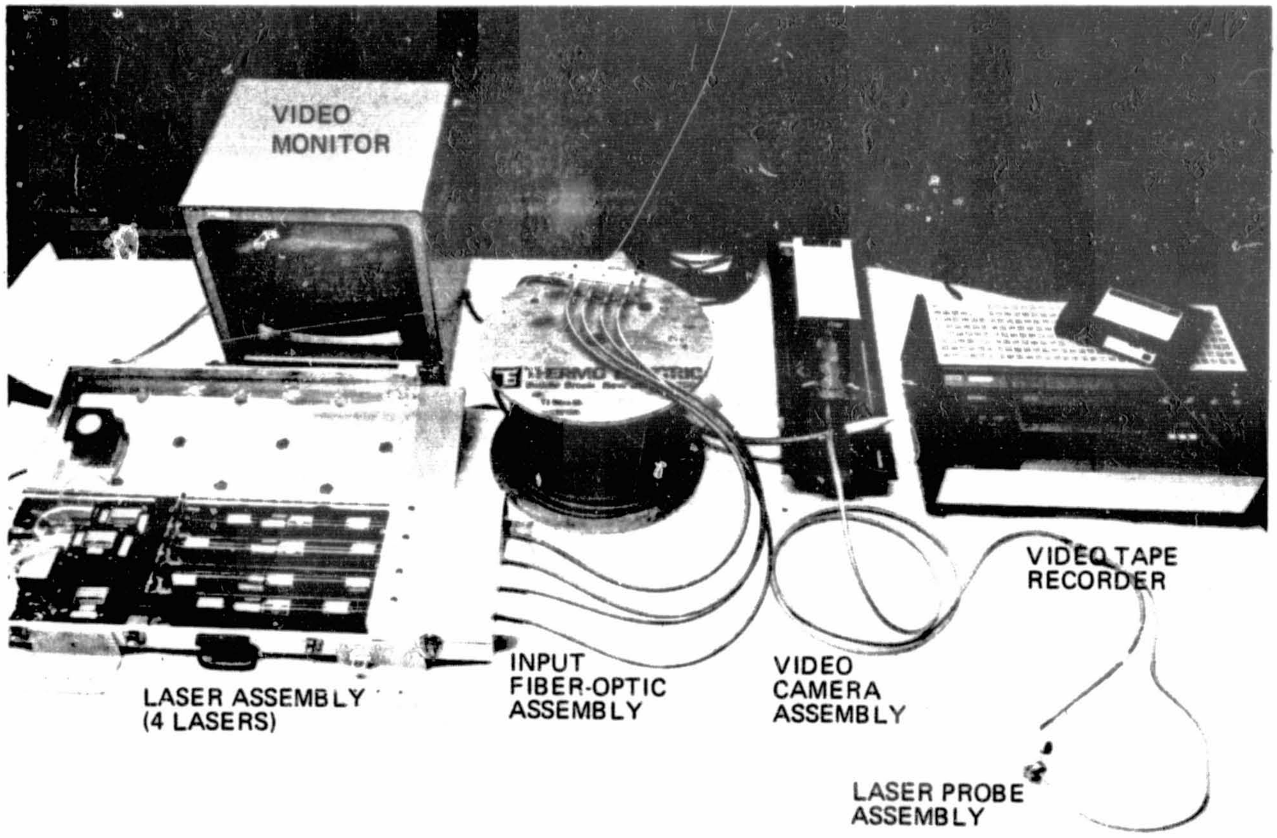
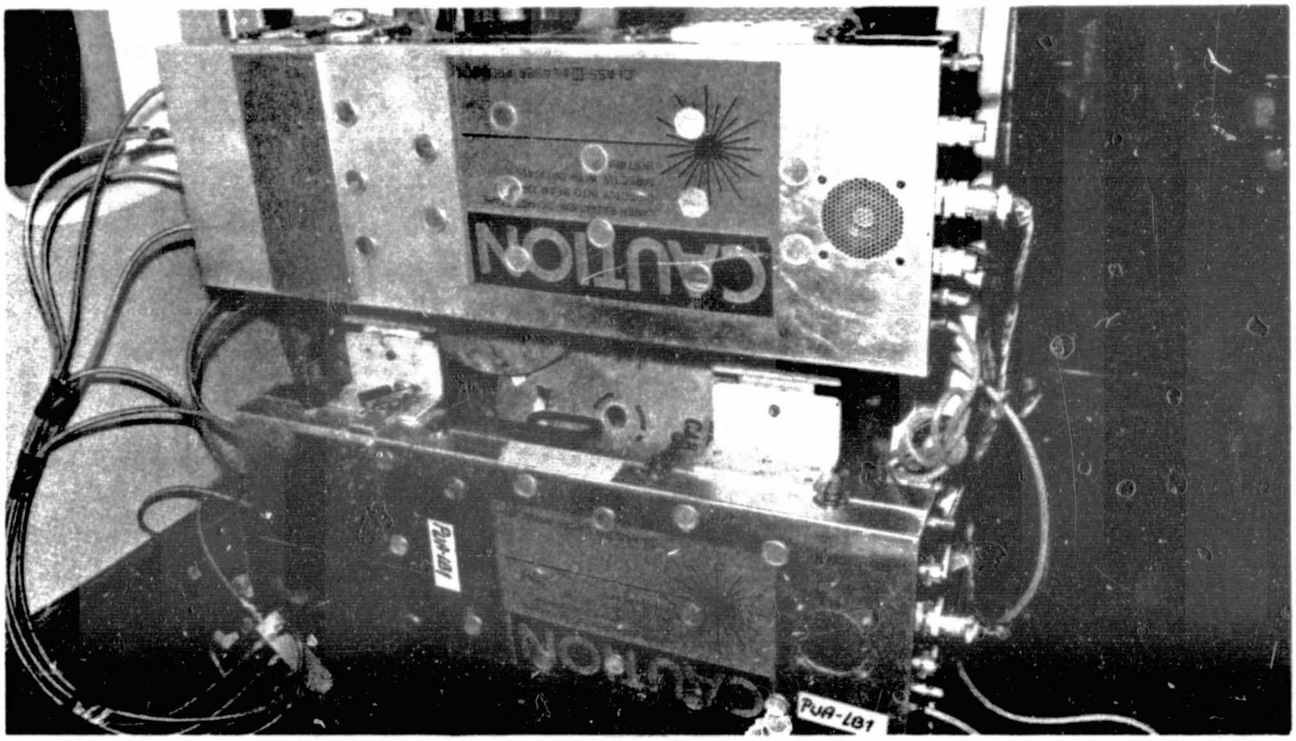


Figure 22. Clearance Monitoring System



125209-18

Figure 23. Laser Generator Boxes

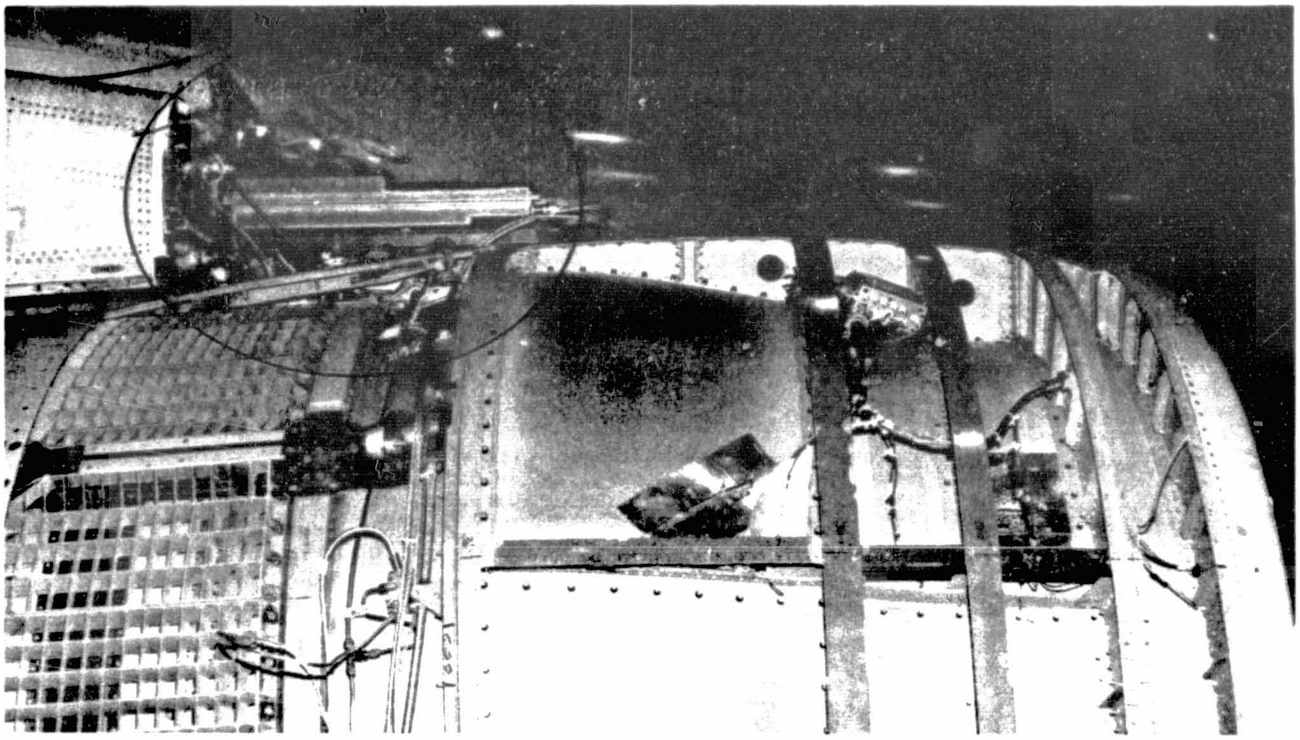
Video cameras were installed in the "dog house" (fig. 24) for the fans on the inboard and outboard engines and in the "kneecap" (fig. 25) of the wing and pylon intersection for the turbine of the inboard engine. The input fiber optic leads were divided in the camera box installation into four separate leads and routed to each laser probe assembly. A fan laser probe assembly is shown in figure 26 and a turbine laser probe assembly is shown in figures 27 and 28. The fan and turbine probe radial locations, which are essentially 90 deg apart, are shown in figure 29.

Reflected light from the engine blades was transmitted back through the probe and through the coherent output fiber optic to the video camera. At the video camera the reflected light was converted to a video signal and transmitted through a cable to the airplane cabin. In the cabin, clearance values were read on the video monitors (fig. 30) and were recorded on a video tape recorder (fig. 31).

In addition to the aforementioned components to the laser system, a gaseous nitrogen system was required to cool and purge the high-pressure turbine laser probes. BCAC provided the system, which was located in the forward cargo hold (fig. 32). Components of the gaseous nitrogen system included storage racks for 56 nitrogen bottles, the nitrogen bottles, the high-pressure manifolds and regulators, control valves, pressure sensors, probe temperature sensors and readout, tubing, and the flow-controlling orifice that is built into the high-pressure turbine probes. The system was configured to provide nitrogen for approximately 13 hours of operation without resupply.

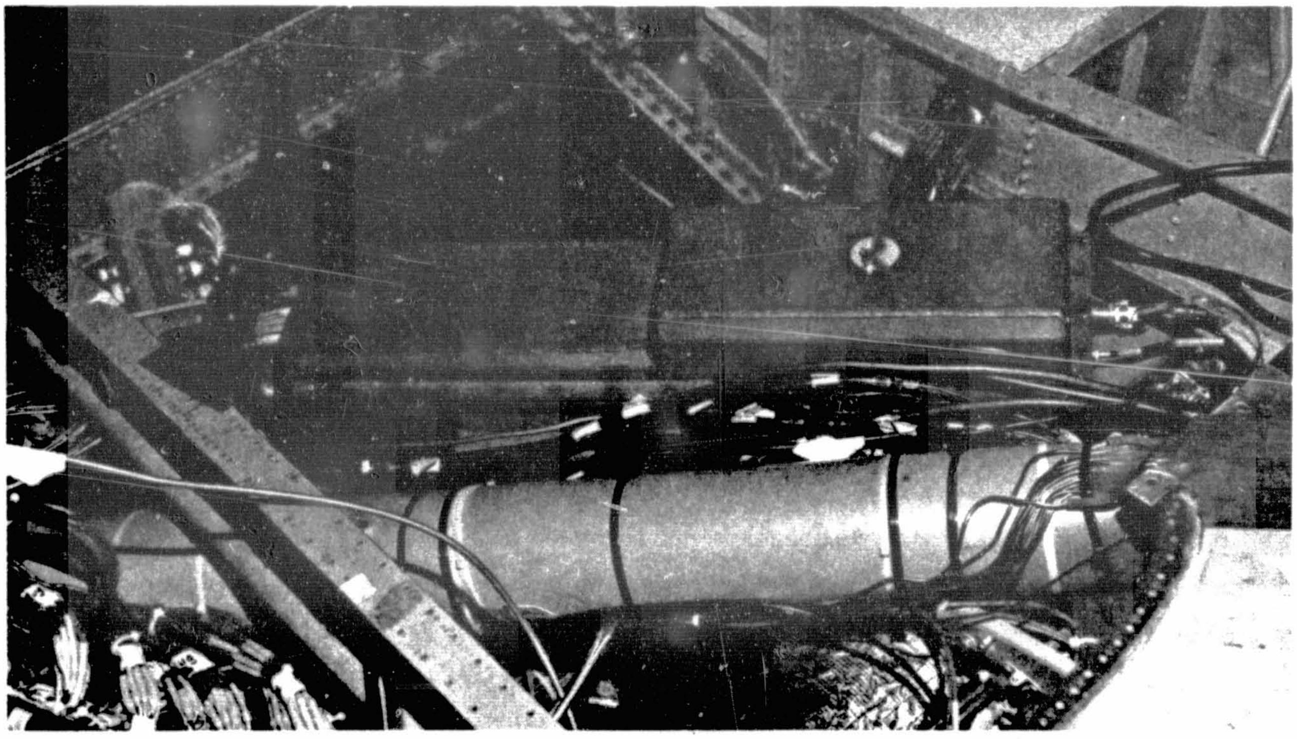
Expanded Engine Performance—Expanded engine performance data (fig. 33) were required for the P&WA effort to correlate measured engine clearance changes or closures with performance losses. Primary emphasis was on engine 3, which had complete instrumentation (fig. 33). Minimum instrumentation to define engine speed and engine airflow and power level was provided for engine 4. Instrumentation for engine 3 was typical of that used for a performance engine test program and was compatible with that used during the pre- and postprogram base engine calibrations at the P&WA Middletown test facility. To better correlate data, the Boeing-owned flight high- and low-rotor speed tachometers (N2 and N1, respectively) and the fuel flow meter were calibrated by P&WA and were used during the pre- and postcalibration at P&WA. The tachometers and flow meter were used on this engine throughout the entire NAIL program.

ORIGINAL PAGE
BLACK AND WHITE PHOTOGRAPH



125209-19

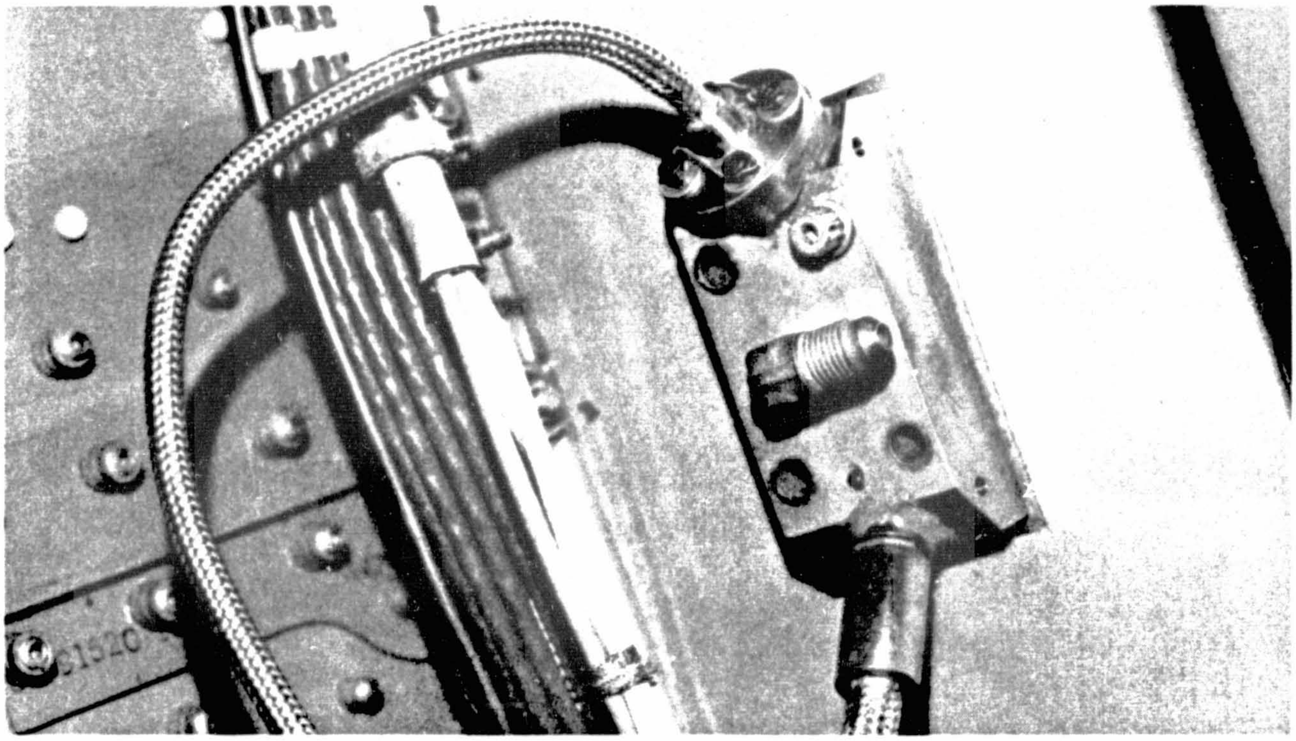
Figure 24. Fan Video Camera Installation



125209-20

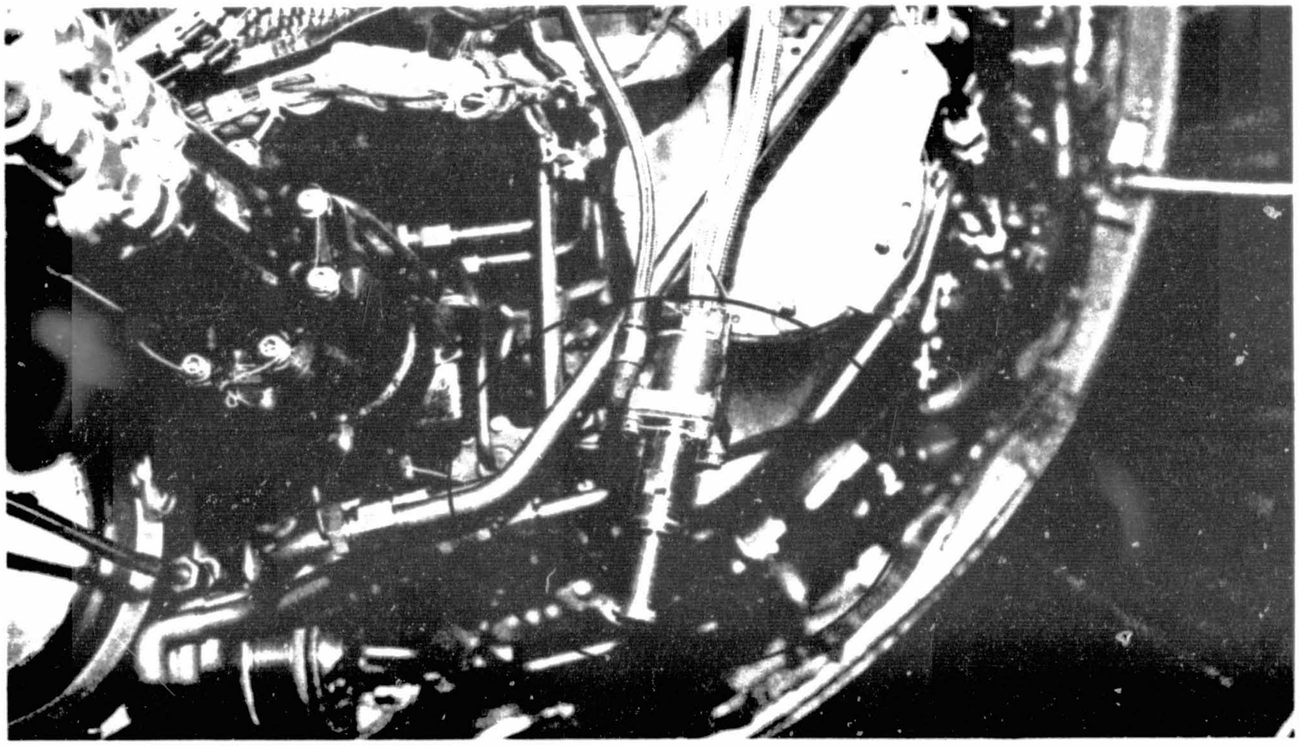
Figure 25. Turbine Video Camera Installation

ORIGINAL PAGE
BLACK AND WHITE PHOTOGRAPH



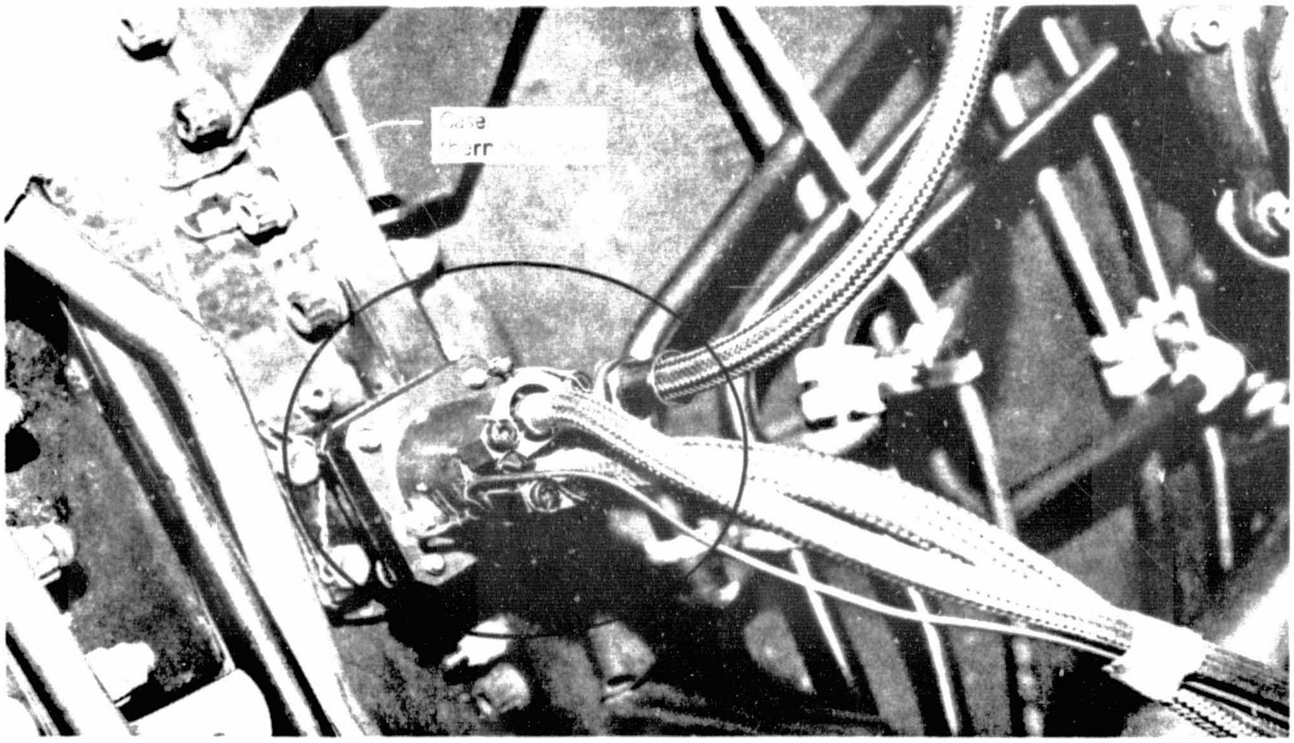
125209-21

Figure 26. Fan Laser Probe



125209-22

Figure 27. Turbine Laser Probe



125209-23

Figure 28. Turbine Laser Probe Installed

ORIGINAL PAGE IS
OF POOR QUALITY

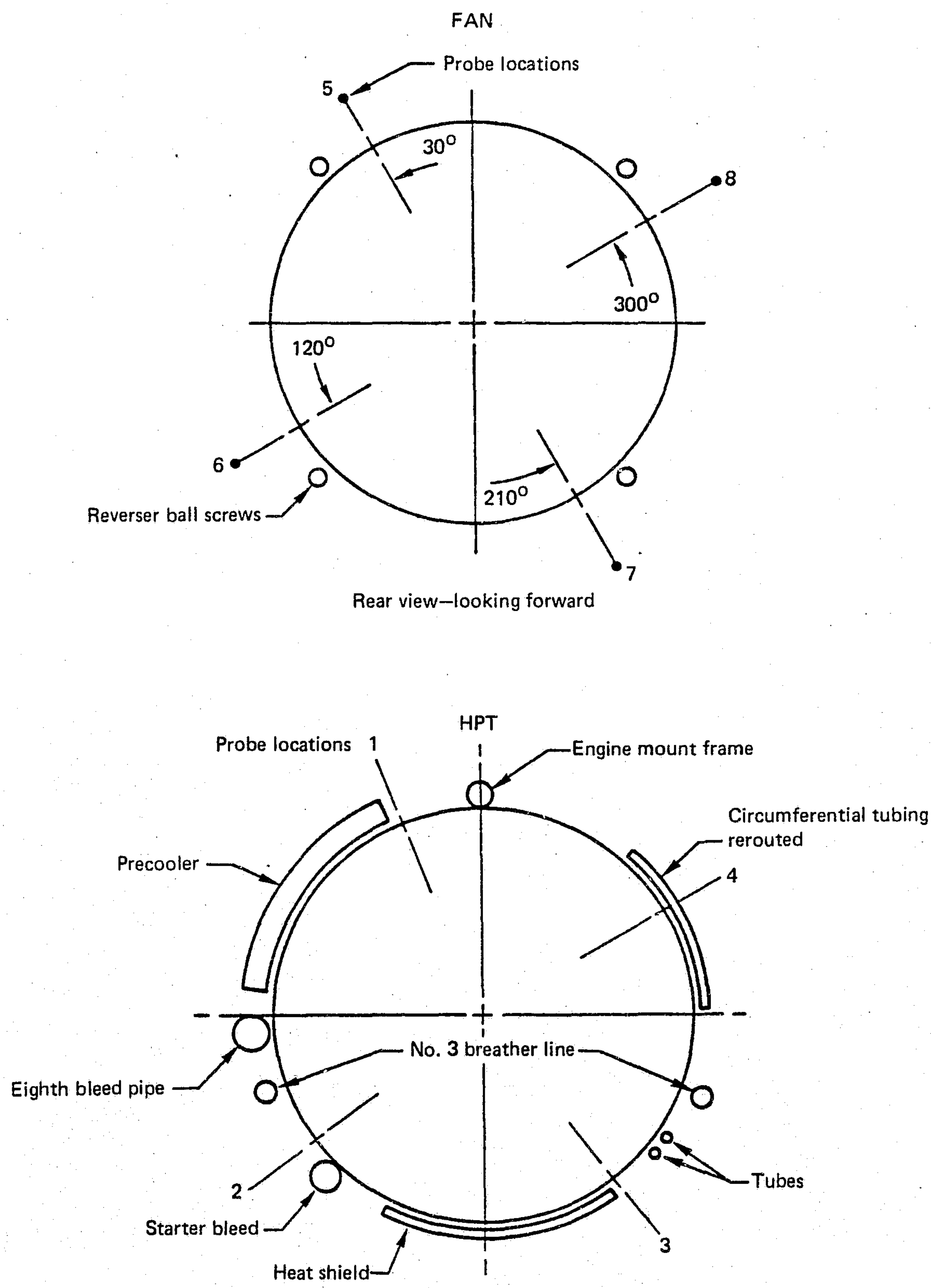
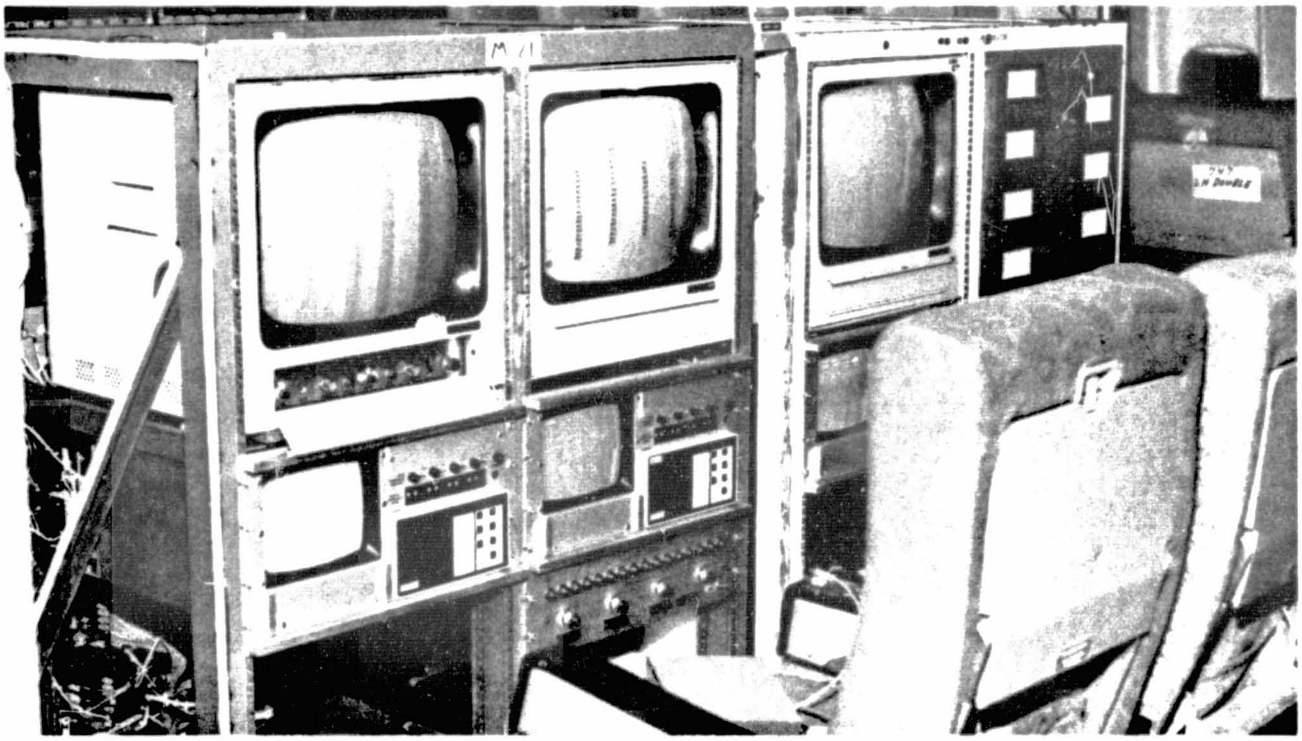


Figure 29. Laser Proximity Probe Locations

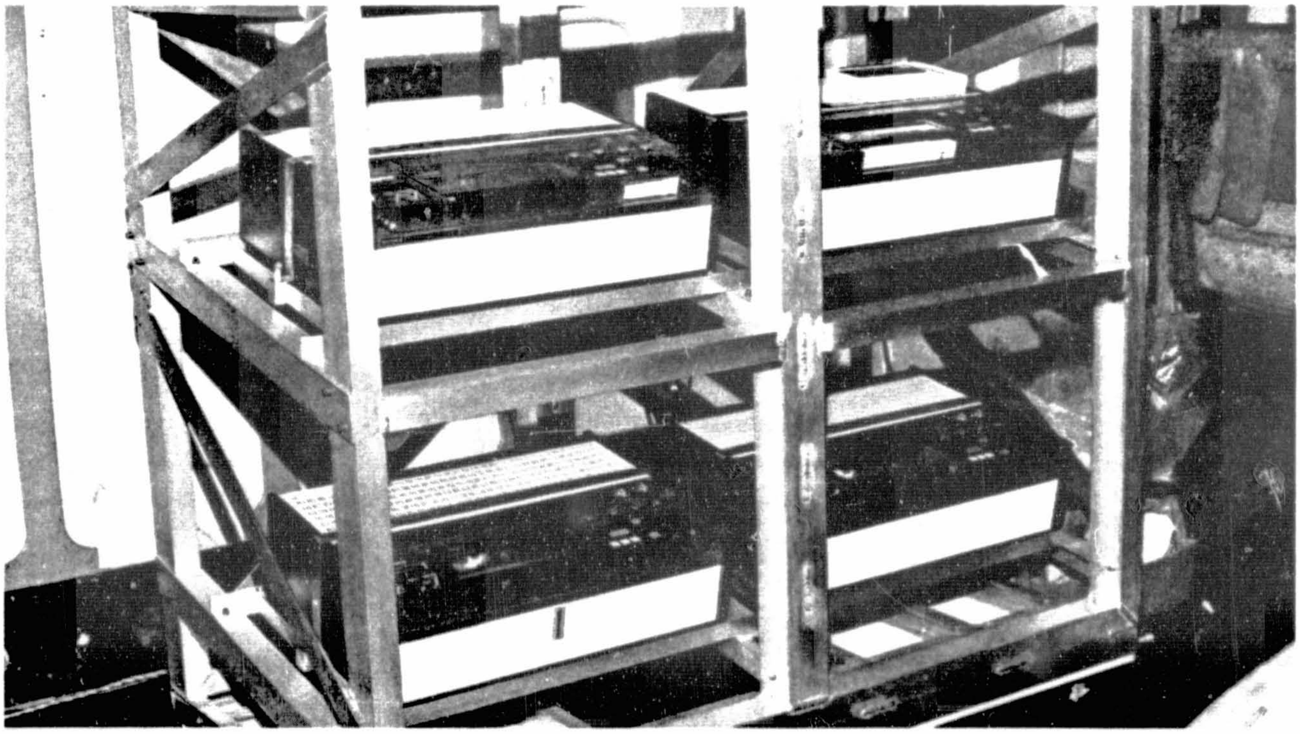
125209-106

ORIGINAL PAGE
BLACK AND WHITE PHOTOGRAPH



125209-24

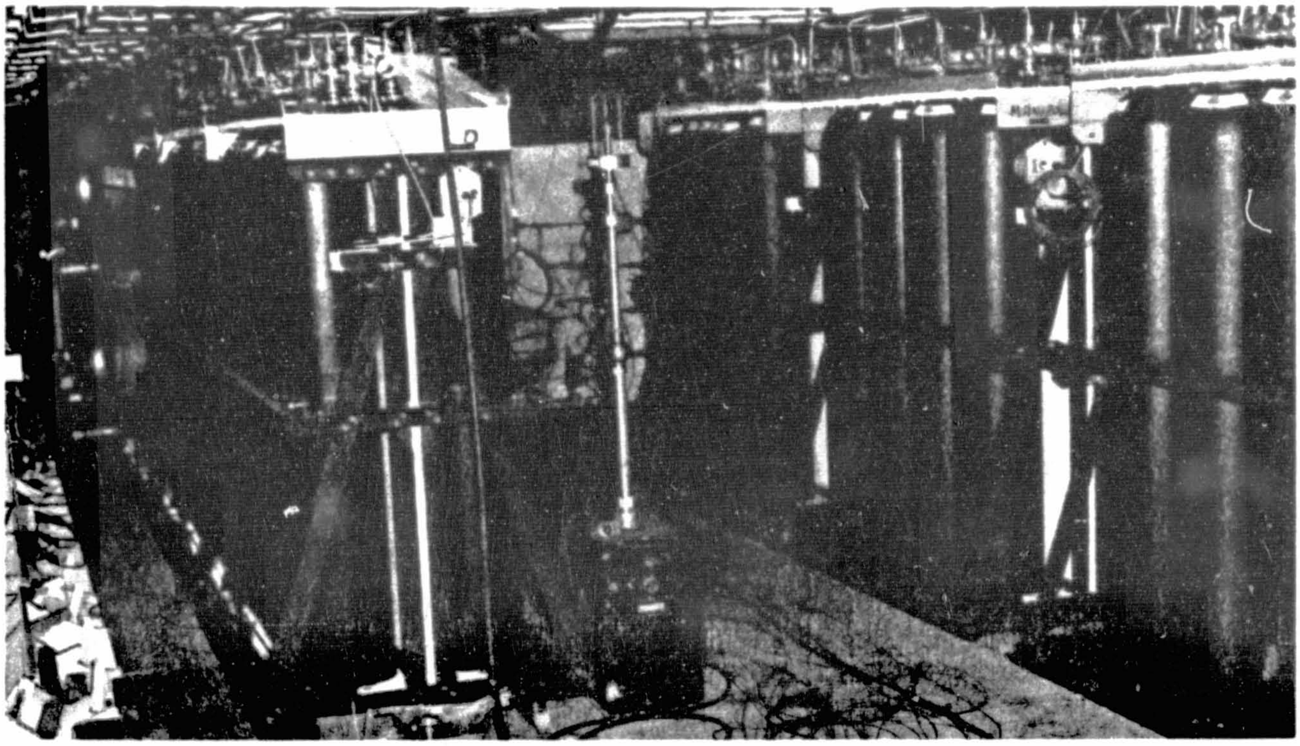
Figure 30. Laser System Video Monitors and Controls



125209-25

Figure 31. Laser Video Tape Recorder

ORIGINAL PAGE
BLACK AND WHITE PHOTOGRAPH



125209-26

Figure 32. Nitrogen System

N2	High-pressure (H.P.) rotor speed
N1	Low-pressure (L.P.) rotor speed
TT7	L.P. turbine discharge total temperature
TT4.5	H.P. compressor discharge total temperature
TT3	L.P. compressor discharge total temperature
TT6	H.P. turbine discharge total temperature
PT7	L.P. turbine discharge total pressure
PT3	L.P. compressor discharge total pressure
PT2.5	Fan stream total pressure at exit guide vane
PS3	L.P. compressor discharge static pressure
PS4	H.P. compressor discharge static pressure
HPC IGV POS	H.P. compressor inlet guide vane position
PWR LVR ANG	Power lever angle
Surge bleed valve POS	
Pylon valve POS	Pylon airbleed shut-off valve position
Air control valve, HPC	Pressure regulator
W_f	Fuel flow rate (computed)
Elapsed fuel	Total fuel burned

125209-20-108

Figure 33. Expanded Engine Performance

4.1.2.2 Installed Propulsion System Aerodynamics

Instrumentation—Selection of the pressure measurement system used for this program was guided by the need to obtain pressure measurements on the wing, pylon, and core cowl only during quasi-steady-state airplane operating conditions. Accordingly, in these areas, a 24-port scanivalve pressure sampling system, which samples 12 ports per second, was compatible with the normal time frame for maintaining quasi-steady-state airplane operating conditions. The option of using individual transducers for each measurement, as on the inlet and fan cowl, thereby allowing a simultaneous sampling of each pressure, was not overlooked. Not enough transducers could be purchased from appropriate manufacturers in the time frame available to complete the test program.

A Gould Statham Model PM 131TC ($\pm$17.2 kPa [$\pm$2.5 lb/in^{2}a]) differential-pressure transducer was used in all scanivalve modules. Specifications for the transducer were as follows: combined nonlinearity and hysteresis of less than $\pm$0.75% full scale, thermal sensitivity shift less than 0.01%/^{o}F from -65^{o}F to +250^{o}F (-54^{o}C to +121^{o}C), and thermal zero shift less than 0.01% full scale/^{o}F from -65^{o}F to +250^{o}F (-54^{o}C to +121^{o}C). The natural frequency of the transducer diaphragm was 3500 Hz. The transducer output resulting from an acceleration stimulus applied perpendicular to the plane of the diaphragm was 0.2% of full scale per g for vibration frequencies to approximately 20% of the diaphragm natural frequency. Above the natural frequency, the response increased in accordance with the behavior of an undamped single-degree-of-freedom system.

Each scanivalve transducer housing was fitted with a thermostatically controlled heater jacket, which maintained a 10^{o}C (50^{o}F) operating environment for the transducer given ambient temperatures below 10^{o}C (50^{o}F). The heater system, however, did not maintain a 10^{o}C (50^{o}F) environment if the ambient temperatures were above 10^{o}C (50^{o}F). This condition seemed likely to occur only in the scanivalve assemblies mounted in the engine pylon where engine bleed air ducts transfer heat into the pylon bays. To monitor the temperature at each scanivalve location, a thermocouple was installed on each scanivalve assembly.

The impact of airplane- or engine-induced vibration on the installed pressure transducers was assessed during the ferry flight to the remote test site. It was assumed that the highest vibration levels would be encountered in scanivalve installation in the engine pylon. Piezoelectric accelerometers were bonded onto the installed scanivalve assembly

and g-levels were measured in a direction perpendicular to the plane of the transducer diaphragm during cruise conditions approximating the required test conditions. The highest measured acceleration level was approximately 0.9g rms at 230 Hz that would produce an output of 0.18% of full scale, based on the transducer acceleration sensitivity.

Other sources of measurement error involved signal gain, analog-to-digital conversion stability, and sampling speed. Testing transducers showed nonlinearity and hysteresis to be ±0.82% at worst and ±0.30% on an average. Based on pre- and postflight system calibrations and monitored in-flight operating conditions, the analog-to-digital conversion error was ±2%. Scanivalve sampling speed was found to be significant only in shock areas. A 6.9 kPa (1 lb/in^2) pressure drop between the first 12 ports and the last 12 ports introduced a ±1% error. The accuracy of measured pressures was estimated to be ±3% in low-pressure gradient areas and ±4% in shock areas.

Static pressure orifices were installed on the pylon and core cowl of inboard and outboard engines 3 and 4 and on the wing in the vicinity of both engines. Three rows of surface-static pressures on the upper surface of the wing and two rows on the lower surface were installed near both engines, (figs. 5 and 6). Two rows of surface static pressures on each side of the engine pylon were installed on engines 3 and 4 (fig. 6). Finally, two rows of surface static pressures were installed on each side of the engine core cowl of engines 3 and 4 (fig. 6).

Surface-static pressure orifices were installed flush to the local wing, pylon, and core cowl surface except for the wing-pressure orifices, which were located over or aft of the wing fuel tanks. In these areas, pressure belts were bonded to the wing surface and faired into the surface (fig. 34). The location of the transition from flush orifices to pressure belt orifices is documented for each wing pressure measurement row (see table 1).

To improve the accuracy of actually locating a position of the pressure orifice on the wing, pylon, or core cowl, computer-generated surface-profile templates marked with the desired orifice location were used in regions experiencing large changes in surface curvature. The actual location of installed pressure orifices deviated in some cases from the desired location because of interference with, for example, structural members and anti-icing ducts. Actual locations were checked again after installation. Orifice positions tabulated in tables 11 to 16 represent the actual installed pressure orifice position plus or minus the tolerance indicated with each group of coordinates.

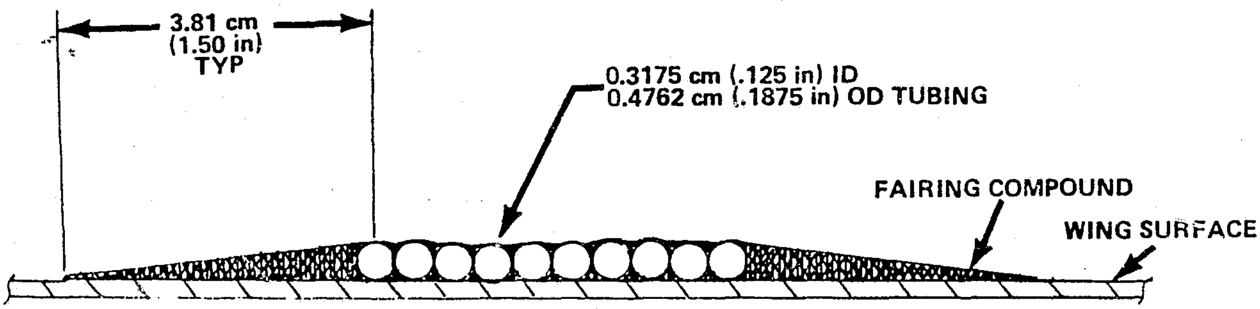


Figure 34. Typical Cross-Section of Wing Pressure Belt

125209-27-190

Orifice positions on the engine 3 fan inlet and cowl did not deviate from the angular position of the profile. Engine 4 fan inlet and cowl orifices deviated from the angular position of the profiles a maximum of ±2 deg. The other significant deviation occurred on both engines 3 and 4 NAC WL 155 and 180 pressure orifice rows. The NAC WL values were within ±1.78 cm (0.7 in).

Additional clarification of locations for those pressure orifices located in the upper and lower surface wing pressure belts is necessary. For belt-located pressure orifices, one pressure orifice was allocated to one belt tube. Because the belt tubes were arranged laterally to provide a low profile, the orifice locations gradually deviated laterally due to tube width, resulting in increasing orifice distance from the start of the pressure belt. Table 17 presents the manner and amount of deviation for each pressure belt orifice at a given WBL.

4.1.3 Test Conditions and Procedures

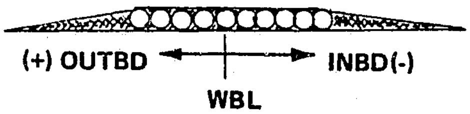
4.1.3.1 Flight Loads

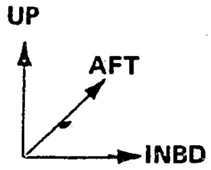
Testing for performance degradation was accomplished in several well defined stages. Such testing was necessary to measure engine clearance changes resulting from various flight maneuvers. Once the installation and fabrication on the test bed aircraft was completed, an engine ground calibration was performed prior to the functional check flight. This calibration enabled comparison with the test stand calibrations by P&WA and provided a data base line for the flight test program.

It was suspected that the first 1% loss in performance due to engine clearance changes occurred during the production flight test acceptance profile (fig. 35). Therefore, this profile was chosen as the basis of the first test flight and was followed by a second ground calibration. Subsequent flights contained high-g turns and variations in takeoff gross weight. Under the test plan, each series of tests required a ground calibration after the particular series. Using these calibrations, performance deterioration was determined for each series of tests. The final ground calibration was performed after completing all flight testing. In all, five ground calibrations were conducted during the NAIL flight test program.

ORIGINAL PAGE IS
OF POOR QUALITY

Table 17. Lateral Offset of Wing Pressure Belt Pressure Orifices From Wing Buttock Line





WBL 445				WBL 510			
UPPER SURFACE		LOWER SURFACE		UPPER SURFACE		LOWER SURFACE	
X_W/C_W	OFFSET X 0.1588 cm (1/16")	X_W/C_W	OFFSET X 0.1588 cm (1/16")	X_W/C_W	OFFSET X 0.1588 cm (1/16")	X_W/C_W	OFFSET X 0.1588 cm (1/16")
0.2000	0	0.1950	0	0.2000	0	0.1972	0
0.2250	-3	0.2453	-3	0.2250	-3	0.2472	-3
0.2500	-6	0.2953	-6	0.2500	-6	0.2972	-6
0.2750	-9	0.3453	-9	0.2750	-9	0.3472	-9
0.3043	-12	0.3953	-12	0.3000	-12	0.3972	-12
0.3543	-15	0.4454	-15	0.3500	-15	0.4472	-15
0.4037	-18	0.4954	-18	0.4000	-18	0.4972	3
0.4538	-21	0.5455	3	0.4500	-21	0.5472	6
0.4750	-24	0.5955	6	0.4750	3	0.5972	9
0.5060	-27	0.6455	9	0.5000	6	0.6472	12
0.5250	3			0.5250	9		
0.5554	6			0.5500	12		
0.6049	9			0.6000	15		
0.6551	12			0.6500	18		
0.7049	15			0.7000	21		
0.7552	18						
0.8049	21						

WBL 470	
UPPER SURFACE	
X_W/C_W	OFFSET X 0.1588 cm (1/16")
0.2000	0
0.3000	-3
0.4000	-6
0.5000	3
0.6000	6

125209-27-191

ORIGINAL PAGE IS
OF POOR QUALITY

Table 17. Lateral Offset of Wing Pressure Belt Pressure Orifices From Wing Buttock Line (Concluded)

WBL 809				WBL 870			
UPPER SURFACE		LOWER SURFACE		UPPER SURFACE		LOWER SURFACE	
Xw/Cw	OFFSET X 0.1588 cm (1/16")	Xw/Cw	OFFSET X 0.1588 cm (1/16")	Xw/Cw	OFFSET X 0.1588 cm (1/16")	Xw/Cw	OFFSET X 0.1588 cm (1/16")
0.2000	0	0.2000	0	0.2000	0	0.2043	0
0.2250	-3	0.2500	-3	0.2250	-3	0.2543	-3
0.2466	-6	0.3000	-6	0.2500	-6	0.3043	-6
0.3000	-9	0.3500	-9	0.3000	-9	0.3543	-9
0.3500	-12	0.4000	-12	0.3500	-12	0.4043	-12
0.4000	-15	0.4500	-15	0.4000	-15	0.4543	-15
0.4500	-18	0.5000	-18	0.4500	-18	0.5043	3
0.5000	-21	0.5500	3	0.4750	-21	0.5543	6
0.5250	3	0.6000	6	0.5000	3	0.6043	9
0.5500	6	0.6500	9	0.5250	6	0.6543	12
0.6000	9			0.5500	9		
0.6500	12			0.6000	12		
0.7000	15			0.6500	15		
0.7500	18			0.7000	18		
0.8000	21						

WBL 834	
UPPER SURFACE	
Xw/Cw	OFFSET X 0.1588 cm (1/16")
0.2405	0
0.3000	-3
0.4000	-6
0.5000	3
0.6000	6

**ORIGINAL PAGE IS
OF POOR QUALITY**

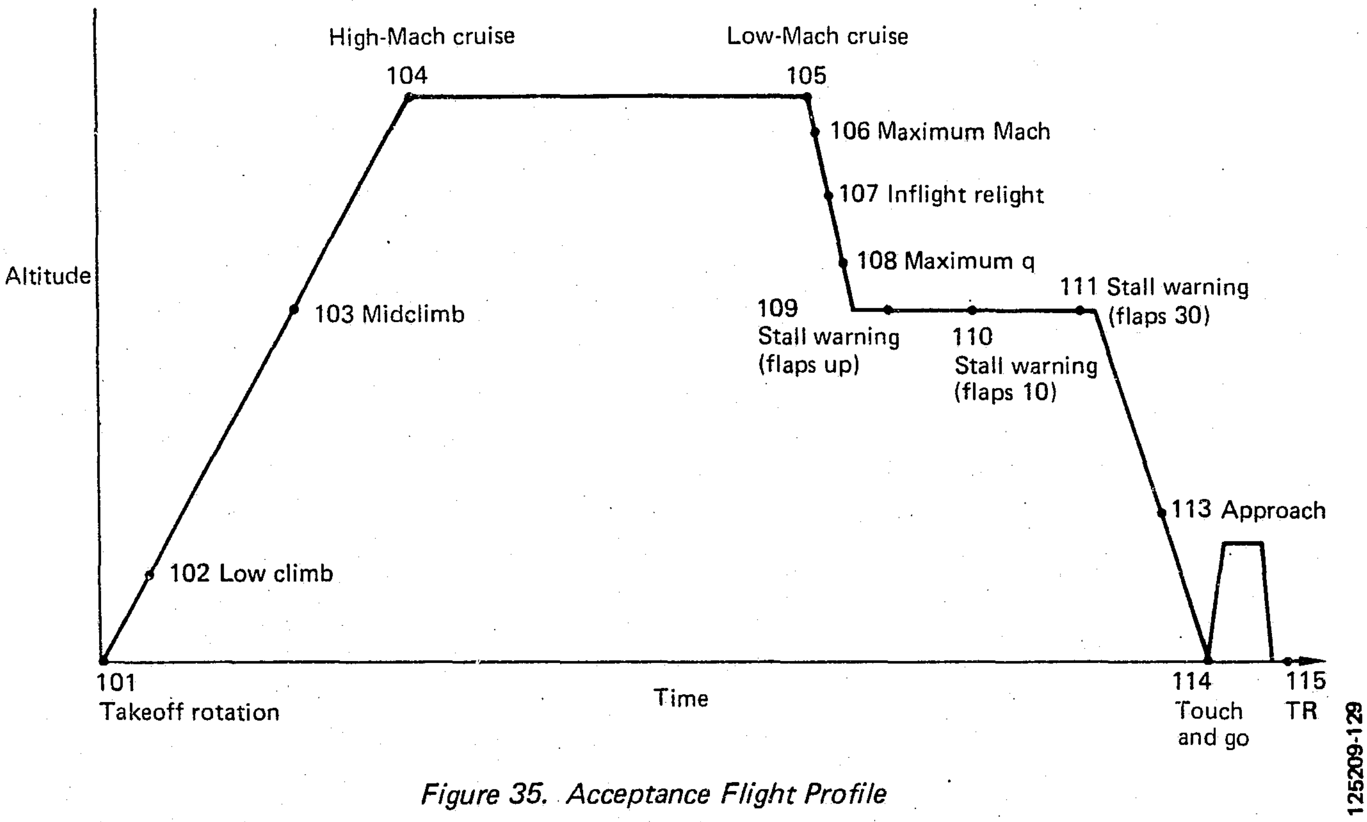


Figure 35. Acceptance Flight Profile

The final test conditions (table 18) of the NAIL program resulted from compromise and various flight restrictions. Originally NAIL was to be a standalone flight program. However, the flight test was conducted concurrently with the 767/JT9D-7R4 test program, which imposed certain flight restrictions on RA001. The most notable restrictions were to remain within the 767 design cruise speed and Mach number (V_C and M_C) limits of 360 kcas and M = 0.86 until the completion of all JT9D-7R4 test conditions and to limit nacelle loads to 80% of the design limit. Upon completion of the JT9D-7R4 program, the 767 design envelope V_C and M_C limits of 420 kcas and M = 0.91 were applied to the NAIL program.

Several restrictions were imposed on the NAIL program—not because of the NAIL flight test profile but because of inclement weather (i.e., rain, snow, hail, fog, high wind, and wide variations in temperature). Moisture caused problems for the RA001 in that only engine 1 had thermal anti-ice protection. Therefore, no flights were conducted into known or suspected icing conditions. The pressure instrumentation (fig. 36) was not to be exposed to visible moisture to ensure that water did not enter the lines and freeze.

Use of laser probes for detection of engine clearance changes dictated adherence to three conditions: that the nitrogen purge and cooling system operate whenever engine 3 was used, that nitrogen cooling be required for the camera environmental housings when ambient ground conditions dictated, and that the aircraft heading prevent sunlight from entering the inlet and interfering with laser readings.

Because a functional check flight and a ferry flight to the remote test site were required prior to any NAIL data collection effort, it was necessary to restrict the level of power to prevent performance losses in the analytically built engine 3. Therefore, all flights prior to the first data flight were limited to an engine pressure ratio (EPR) of 1.18 with no bleeds during takeoff and maintained a locked throttle climb to 10 000 ft at which time normal operation resumed.

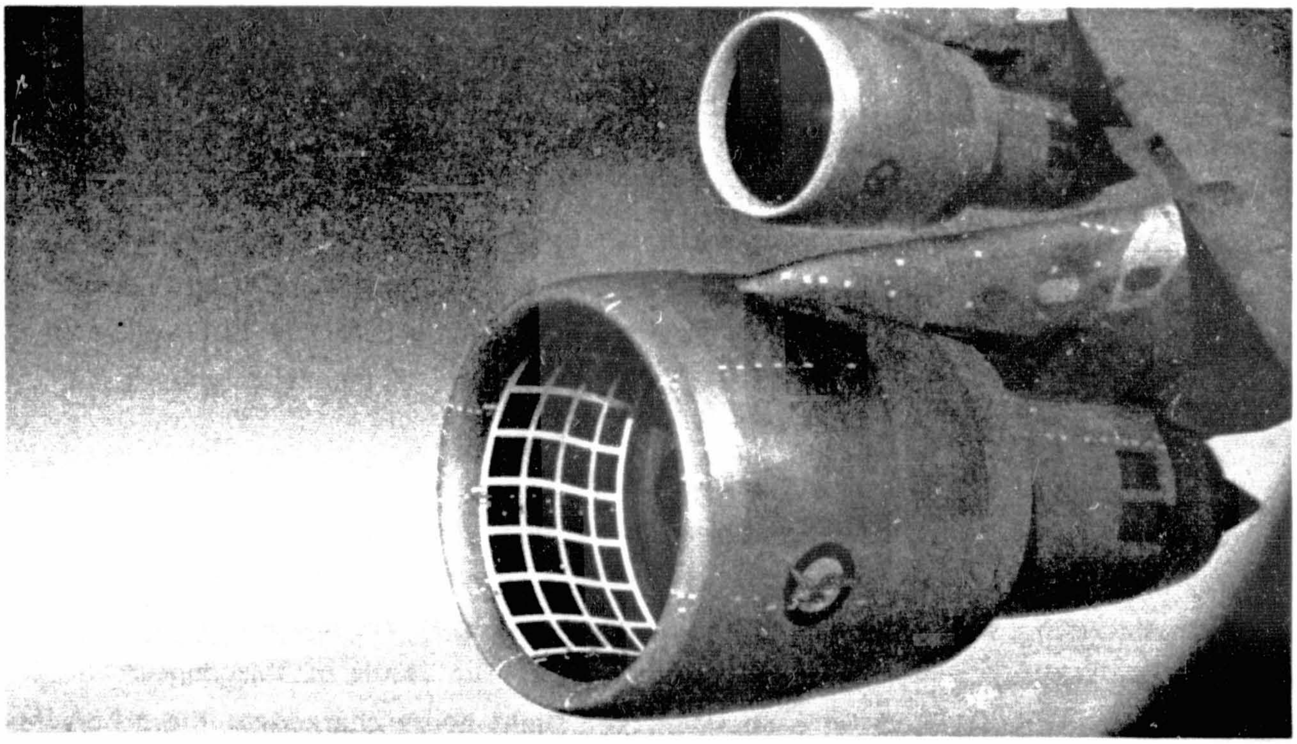
As a result of the concurrent testing programs, data were taken over approximately 33 hours of flight time instead of over the initially planned 15-hour maximum. The increased flight time resulted in a substantially larger quantity of data to survey and select from for analysis and provided additional conditions for analysis. The result of this concurrent testing was that additional data were obtained, yet flight hours charged to the NASA program were considerably fewer than planned.

ORIGINAL PAGE IS OF POOR QUALITY

Table 18. Test Conditions Flown

Test condition	Test no.	Event time	Pressure altitude, ft	M
101 612K gross weight takeoff (flaps 20)	273-7	6:41:44	2 553	0.250
101 538K gross weight takeoff (flaps 10)	273-10	9:44:10	2 667	0.239
101 647K gross weight takeoff (flaps 10)	273-11	10:13:52	2 634	0.254
118 780K gross weight simulated takeoff (flaps 10)	273-15	8:13:18	3 646	0.296
102 Low climb	273-10	9:46:00	5 861	0.367
103 Mid climb	273-7	7:28:44	17 187	0.599
104 High M cruise	273-7	7:49:26	35 481	0.859
105 Low M cruise	273-7	7:56:40	35 512	0.772
106 Max M	273-15	12:09:27	36 978	0.906
107 Inflight relight	273-7	8:12:53	27 859	0.721
108 Maximum q	273-15	11:39:00	24 513	0.836
109 Stall warning (flaps up)	273-7	8:18:58	16 964	0.391
110 Stall warning (flaps 10)	273-7	8:22:26	16 239	0.347
111 Stall warning (flaps 30)	273-7	8:24:52	17 049	0.270
112 Idle descent	273-7	8:28:56	8 450	0.439
113 Approach	273-7	8:34:27	6 003	0.265
114 Touch and go	273-7	8:40:36	2 561	0.263
115 Thrust reverse	273-7	8:46:00	2 561	0.179
116 2.0g left turn (flaps up)	273-10	13:33:58	8 397	0.487
117 1.6g left turn (flaps 30)	273-10	13:41:07	8 202	0.260
120 2.0g right turn (flaps up)	273-15	11:04:03	8 240	0.476
121 1.6g right turn (flaps 30)	273-15	11:07:25	8 278	0.266
123 Airplane stall	273-10	13:26:17	9 000	0.207

125208-20-107



125209-28

Figure 36. View of Pressure Ports

4.1.3.2 Installed Propulsion System Aerodynamics

Four test conditions were flown during the IPSA program. The test conditions included level flight at M = 0.77, 0.80, and 0.86 and at M = 0.91, a condition that required the airplane to be put into a shallow dive. The test conditions flown at M = 0.77, 0.86, and 0.91 satisfied the contract commitment and were coincident with flight load conditions. All test conditions were flown at a representative cruise altitude.

Preflight and postflight calibrations of the pressure measuring system were performed for each test flight. During a test flight, seven flight condition parameters were monitored online with a multichannel pen recorder. These parameters included flight Mach number, ambient total temperature, angle of attack, heading, pressure altitude, sideslip, and inboard aileron position. These parameters were used collectively to determine the stability of the airplane prior to and during the recording of measured pressure data. In each parameter, the deviations allowed for approximately a 30-sec period during which measured data were recorded; these deviations are:

Mach number	± 0.001
Ambient total temperature	$\pm 0.1^{\circ}C$
Angle of attack	± 0.25 deg
Heading	± 0.2 deg
Pressure altitude	± 3.048m (± 10 ft)
Sideslip	± 0.25 deg
Aileron position	± 1 deg

All test conditions were flown with the airplane autopilot engaged and in the altitude hold mode.

Because all measured pressure data were acquired during cruise conditions, no wing leading- or trailing-edge devices that would alter the basic wing geometry described in table 1 were deployed with the exception of the inboard aileron. In cruise, the inboard aileron provided small amounts of roll control and was combined with various amounts of midspan spoiler deployment for larger rolling moment inputs. During data recordings, some small aileron deflections, well below those levels causing limited spoiler deployment, were required to maintain level flight. Accordingly, this small amount of inboard aileron deflection effectively changed the local wing camber at WBLs 445, 470, and 510.

For reference, the geometrical arrangement of the inboard aileron at WBLs of 445 and 510 including the wing line location is presented in table 19. The outboard aileron was locked out during cruise and therefore was an inactive control surface at 0-deg deflection.

4.1.4 Test Data Format

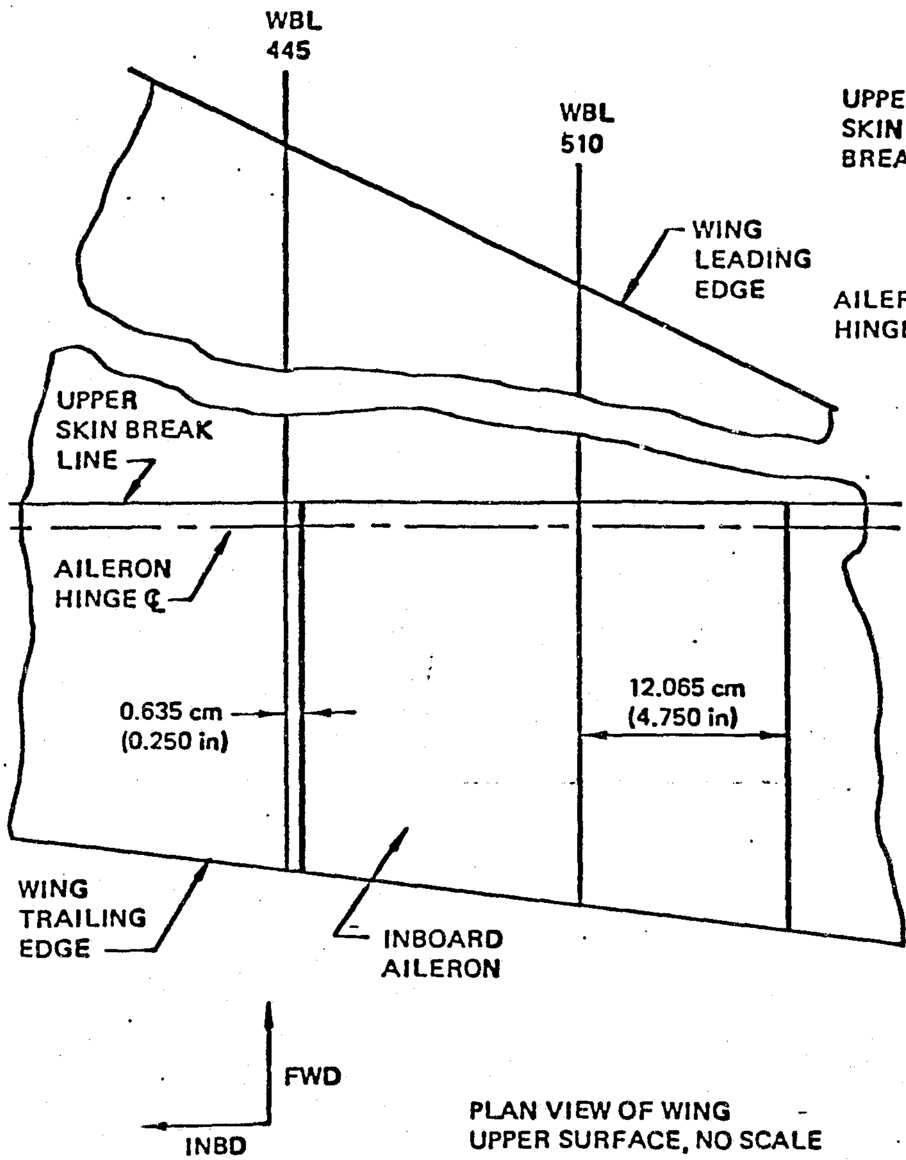
The data collected during the NAIL program required careful use of the airborne data analysis and monitor system (ADAMS) and of the final data system. Of particular concern was the ability to assess real-time data quality for flight decisions, because 1023 channels of measurements were being made during the combined test program and no ground-based analysis system was available at the remote site. It was necessary to send the flight tape to Seattle shortly after completion of the day's testing. This requirement did not allow rerunning the tape on the ADAMS. Therefore, essentially all decisions were based upon real-time data obtained from the ADAMS during flight. Further development of the onboard ADAMS and the combined use of the final data system in conjunction with the flight test interactive graphics data analysis (IGDA) site aided in coping with this problem.

The basic ADAMS (fig. 37) could not handle the volume of data required by the JT9D-7R4 and NAIL programs. The expanded data handling capabilities of the analysis groups doubled that of the basic system by using a second ADAMS on the RA001. The quantity of data collected during the program required system modification in order to minimize testing and preflight delays. These modifications to the onboard flight test system (fig. 38) provided adequate remote-base support to the flight test program. Several hardware and software changes to the basic ADAMS were implemented to accomplish this support.

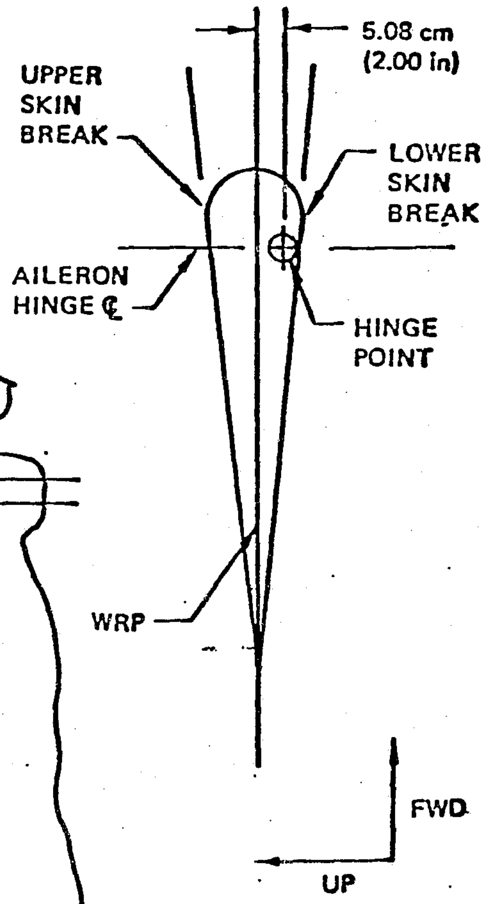
Two other significant hardware changes were made to the basic ADAMS. First, a fixed head disk for program and measurement information storage was used. The fixed head disk eliminated loading of information through Cartrifiles each time the system was brought online. This improvement was vital because activating the system required 1 to 2 min rather than 15 min as projected, based on the number of measurements required. A 15-min delay was unacceptable in terms of cost, if the system should malfunction once airborne. Further, rapid selection of preselected data sources was also a requirement in view of the quantity of data being measured and the concurrent test program to permit

ORIGINAL PAGE IS
OF POOR QUALITY

Table 19. Inboard Aileron



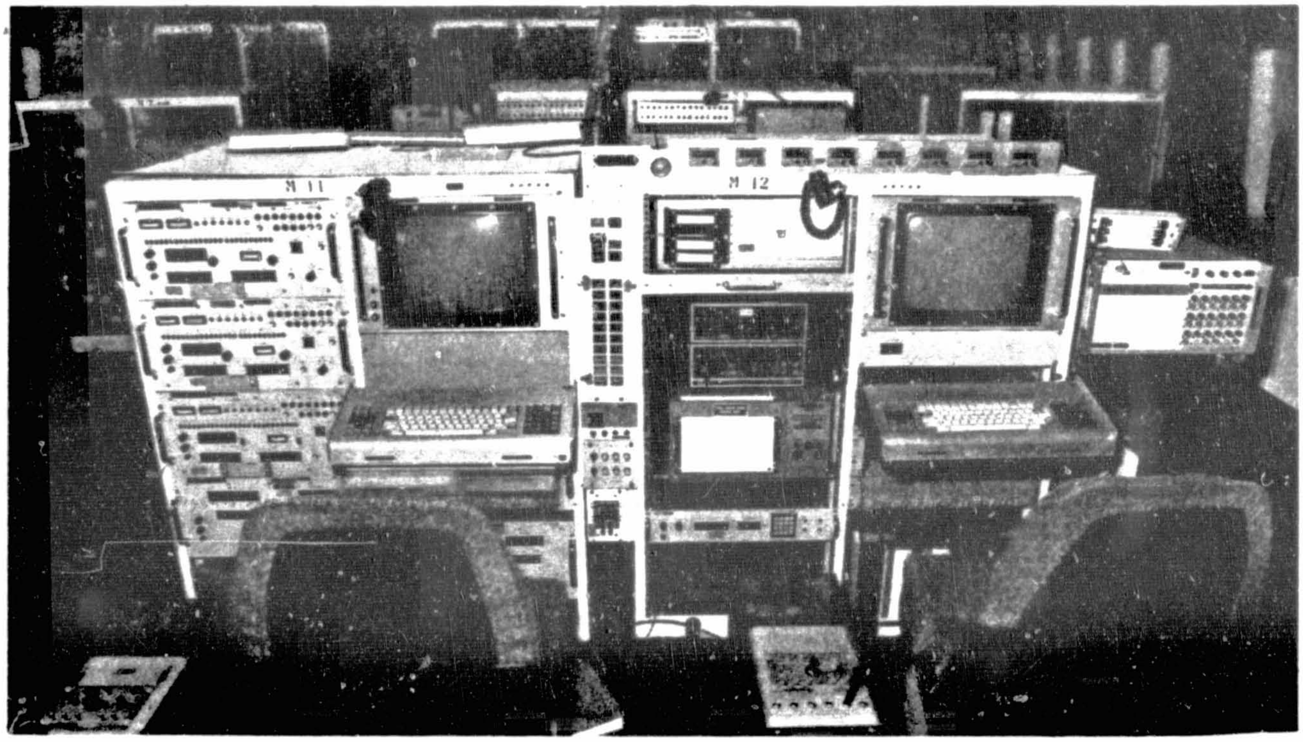
PLAN VIEW OF WING
UPPER SURFACE, NO SCALE



CROSS SECTION
OF INBOARD
AILERON, NO SCALE

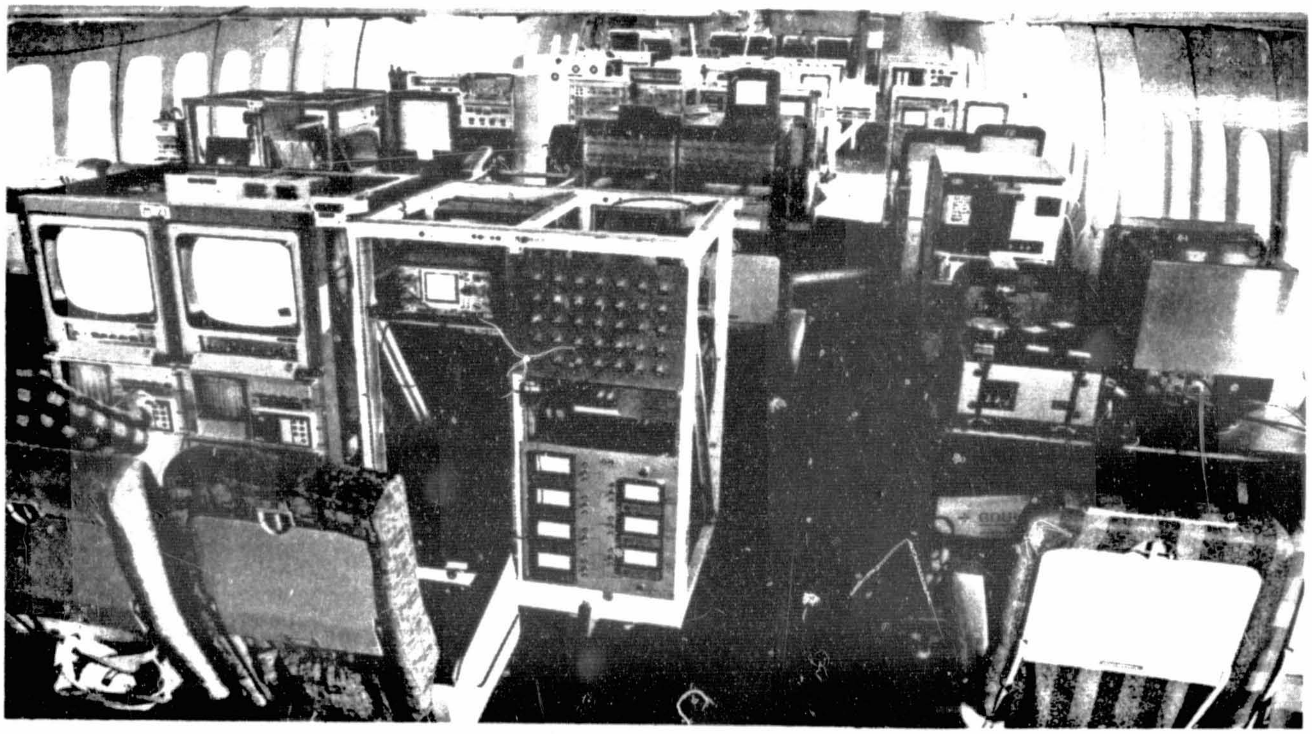
DISTANCE MEASURED IN WRP, cm (in)	WBL	
	445	510
Leading edge to aileron hinge centerline	830.78 (327.08)	680.54 (267.93)
Leading edge to upper surface skin break line	827.58 (325.82)	677.34 (266.67)
Leading edge to lower surface skin break line	828.47 (326.17)	677.77 (266.84)

ORIGINAL PAGE IS
OF POOR QUALITY



125209-29

Figure 37. Airborne Data Analysis and Monitoring System



125209-30

Figure 38. Test Airplane Interior View

the test engineers to track their respective data. Second, a data measurement selector was incorporated into the ADAMS. This was necessary because approximately 1023 measurements were obtained during the flight test. The data measurement selector sent data preselected for output to the digital-to-analog converter.

The original ADAMS software could not support the NAIL program during remote base operation. An onboard pressure coefficient (PC) program was lacking, and thus development of an interim program that satisfied the needs of analysis was necessary. The PC program was developed to use the Brush recorder as a quasigraphics system and to use the line printer for summary outputs. The program could calculate pressure coefficients for up to 16 measurement groups with a maximum of 20 pressure ports each. The output of the program was displayed on the Brush recorder while a summary table of port differential pressures and pressure coefficient values was printed on the line printer. This information was output either continuously or upon keyboard command for a predetermined time interval. The program provided real-time information for determining data quality and for making decisions on subsequent test conditions.

Data were supplied in the forms of tables, computer-generated graphs, and data files on magnetic tapes. Table 20 is an example of a pressure coefficient data table. Engine performance and fuel flow examples are given in tables 21 and 22. An example of an engine clearance data table is given in table 23. Finally, table 24 is an example of a turbine case temperature table. The magnetic tape data files included all the above examples and basic airplane data for all flight conditions, plus acceleration data for the heavyweight landing.

4.2 TEST RESULTS

4.2.1 Aerodynamic and Inertial Loads

4.2.1.1 Aerodynamic Loads

Pressures were measured at 252 ports in 12 rows nominally 30 deg apart on the inlet and fan cowl of engine 3. The actual spacing varied slightly for some ports because of installation and arrangement requirements. (See Appendix A for details.) Fourteen ports were found to have defective or doubtful transducers, and the indicated pressures of those ports were not used. Pressure data are presented graphically and in tabular form in Appendix A.

Table 20. Pressure Coefficient

AIRPLANE MODEL 747-100 TEST 273-07 PRESSURE COEFFICIENT REQUEST NO 0591.0300
AIRPLANE NUMBER RA001 DATE 10/13/80 TIME 0347

COORDINATION TIME HR-MIN-SEC	CE	ALPHA DEG	Q PSI	PRESS-INLET E3 PT01 240R PS 3211	CP	PRESS-INLET E3 PT02 240R PS 3212	CP	PRESS-INLET E3 PT03 240R PS 3213	CP	PRESS-INLET E3 PT04 240R PS 3214	CP	PRESS-INLET E3 PT05 240R PS 3215	CP	PRESS-INLET E3 PT06 240R PS 3216	CP
8-33-20.014		DNA	IEC	11.296	IEC	11.152	IEC	10.994	IEC	10.871	IEC	10.629	IEC	10.487	IEC
8-33-20.064		DNA	0.495	11.225	-1.040	11.136	-1.220	10.994	-1.506	10.852	-1.794	10.603	-2.236	10.475	-2.555
8-33-20.114		DNA	0.495	11.182	-1.126	11.152	-1.187	11.064	-1.364	10.852	-1.774	10.638	-2.227	10.512	-2.451
8-33-20.164		DNA	0.495	11.197	-1.098	11.152	-1.188	10.994	-1.506	10.890	-1.717	10.620	-2.262	10.499	-2.504
8-33-20.214		DNA	0.495	11.182	-1.126	11.168	-1.155	11.029	-1.435	10.890	-1.717	10.655	-2.192	10.487	-2.532
8-33-20.264		DNA	0.495	11.254	-0.983	11.184	-1.123	10.994	-1.507	10.909	-1.678	10.655	-2.172	10.487	-2.532
8-33-20.314		DNA	0.495	11.211	-1.069	11.168	-1.155	11.029	-1.436	10.852	-1.795	10.655	-2.172	10.487	-2.532
8-33-20.364		DNA	0.495	11.310	-0.868	11.216	-1.058	11.052	-1.329	10.871	-1.756	10.638	-2.223	10.500	-2.507
8-33-20.414		DNA	0.495	11.239	-1.012	11.152	-1.188	11.030	-1.436	10.871	-1.756	10.621	-2.263	10.487	-2.532
8-33-20.464		DNA	0.495	11.296	-0.897	11.168	-1.155	11.030	-1.436	10.871	-1.756	10.603	-2.293	10.475	-2.553
8-33-20.514		DNA	0.495	11.353	-0.782	11.184	-1.123	10.977	-1.542	10.891	-1.717	10.621	-2.263	10.463	-2.552
8-33-20.564		DNA	0.495	11.268	-0.954	11.184	-1.123	10.995	-1.507	10.871	-1.756	10.621	-2.262	10.500	-2.507
8-33-20.614		DNA	0.495	11.225	-1.040	11.200	-1.091	10.995	-1.507	10.833	-1.833	10.621	-2.262	10.500	-2.507
8-33-20.664		DNA	0.495	11.240	-1.011	11.152	-1.188	11.012	-1.471	10.833	-1.833	10.638	-2.227	10.475	-2.557
8-33-20.714		DNA	0.495	11.226	-1.040	11.088	-1.318	11.030	-1.436	10.852	-1.795	10.621	-2.263	10.500	-2.507
8-33-20.764		DNA	0.495	11.240	-1.012	11.137	-1.221	11.012	-1.472	10.872	-1.755	10.638	-2.223	10.475	-2.559
8-33-20.814		DNA	0.494	11.226	-1.041	11.137	-1.221	11.012	-1.472	10.852	-1.795	10.621	-2.264	10.500	-2.508
8-33-20.864		DNA	0.494	11.254	-0.984	11.217	-1.059	11.030	-1.437	10.891	-1.718	10.656	-2.194	10.513	-2.484
8-33-20.914		DNA	0.494	11.211	-1.070	11.137	-1.221	11.013	-1.472	10.872	-1.757	10.621	-2.264	10.513	-2.484
8-33-20.964		DNA	0.494	11.212	-1.070	11.185	-1.124	11.048	-1.401	10.891	-1.718	10.636	-2.229	10.438	-2.534
8-33-21.014		DNA	0.494	11.254	-0.984	11.185	-1.124	11.013	-1.472	10.910	-1.680	10.621	-2.264	10.475	-2.559
8-33-21.064		DNA	0.494	11.269	-0.955	11.201	-1.091	11.013	-1.472	10.872	-1.757	10.604	-2.299	10.476	-2.559
8-33-21.114		DNA	0.494	11.325	-0.840	11.265	-0.962	11.030	-1.437	10.872	-1.757	10.639	-2.229	10.493	-2.534
8-33-21.164		DNA	0.494	11.226	-1.041	11.169	-1.156	11.030	-1.437	10.853	-1.796	10.621	-2.264	10.476	-2.557
8-33-21.214		DNA	0.494	11.311	-0.868	11.137	-1.221	11.048	-1.401	10.891	-1.718	10.604	-2.299	10.501	-2.505
8-33-21.264		DNA	0.494	11.254	-0.983	11.137	-1.221	11.013	-1.472	10.891	-1.718	10.604	-2.299	10.458	-2.533
8-33-21.314		DNA	0.494	11.283	-0.926	11.153	-1.188	10.978	-1.543	10.853	-1.795	10.639	-2.228	10.458	-2.533
8-33-21.364		DNA	0.495	11.297	-0.897	11.153	-1.188	10.960	-1.578	10.891	-1.717	10.622	-2.263	10.488	-2.532
8-33-21.414		DNA	0.495	11.240	-1.012	11.137	-1.220	10.995	-1.507	10.872	-1.756	10.622	-2.262	10.476	-2.557
8-33-21.464		DNA	0.495	11.155	-1.184	11.169	-1.155	11.031	-1.435	10.834	-1.833	10.622	-2.262	10.513	-2.451
8-33-21.514		DNA	6.495	11.212	-1.069	11.153	-1.187	10.960	-1.577	10.911	-1.678	10.655	-2.191	10.476	-2.556
8-33-21.564		DNA	0.495	11.198	-1.097	11.169	-1.155	11.048	-1.399	10.872	-1.755	10.639	-2.226	10.521	-2.505
8-33-21.614		DNA	0.495	11.269	-0.953	11.218	-1.058	11.013	-1.470	10.911	-1.677	10.691	-2.121	10.526	-2.455
8-33-21.664		DNA	0.495	11.226	-1.039	11.186	-1.122	11.048	-1.399	10.949	-1.599	10.674	-2.155	10.563	-2.379
8-33-21.714		DNA	0.495	11.283	-0.925	11.218	-1.057	11.066	-1.364	10.911	-1.677	10.674	-2.156	10.525	-2.455
8-33-21.764		DNA	0.495	11.241	-1.011	11.154	-1.187	11.031	-1.435	10.815	-1.871	10.622	-2.261	10.414	-2.650
8-33-21.814		DNA	0.495	11.284	-0.925	11.170	-1.155	11.031	-1.435	10.753	-1.987	10.518	-2.472	10.390	-2.731
8-33-21.864		DNA	0.495	11.340	-0.810	11.186	-1.123	10.976	-1.506	10.854	-1.794	10.587	-2.332	10.476	-2.556
8-33-21.914		DNA	0.495	11.255	-0.983	11.186	-1.123	11.014	-1.471	10.950	-1.601	10.674	-2.157	10.551	-2.406
8-33-21.964		DNA	0.495	11.213	-1.069	11.186	-1.123	11.031	-1.436	10.950	-1.601	10.709	-2.087	10.563	-2.382

CONDITION AVERAGES

CALIBRATED AIRSPEED	145.3 KNOTS	MACH NUMBER	0.245
PRESSURE ALTITUDE	6072 FEET	FLAP POSITION	30 DEG
DYNAMIC PRESSURE	0.495 PSI	LANDING GEAR	UP
NORMAL ACCELERATION	1.043 G	GROSS WEIGHT	0 LBS

PROGRAM LIBRARY 08/11/80 PR07

CONDITION NO 4.03.015.118
DOCUMENT NO D6-22119-1
PAGE NO

ORIGINAL PAGE IS OF POOR QUALITY

Table 21. Summary of Measurements of Engine Performance

AIRPLANE MODEL 747-100 TEST 273-15 JT9 ENG PERF SUMMARY REQUEST NO 1316.0101
AIRPLANE NUMBER RA001 DATE 10/31/80 TIME 0515

AIRPLANE DATA

HP FEET	M	V KTS	DELTAM DEG C	TAM DEG C	TT1 DEG C	PS1 IN HG	PT1 IN HG	DELAMB	DELT1	THEA67	THET67	THET91	THET57
24076.	0.601	364.8	2.5	-30.2	-12.7	11.56	14.75	0.3863	0.4930	0.8920	0.9346	NDA	NDA

GAS GENERATOR SUMMARY

ENG STS	FN RFN LBS	SFC RSFC	N1 RN1 RPM	N2 RN2 RPM	T6 RT6 C/K	T7 RT7 C/K	WF RWF LB/HR	WAT RWAT LB/SC	P25PT1 PT7PT1	PS4 PS4PT7	SBV BPR POS/	SVA SGF DEG/	PLA DEG
1	NDA	IDU	NDA	NDA	NDA	NDA	IDU	NDA	NDA	NDA	NDA	NDA	NDA
NDA	NDA	IDU	NDA	NDA	NDA	NDA	IDU	NDA	NDA	NDA	NDA	0.8213	
2	NDA	IDU	NDA	NDA	NDA	NDA	IDU	NDA	NDA	NDA	NDA	NDA	NDA
NDA	NDA	IDU	NDA	NDA	NDA	NDA	IDU	NDA	NDA	NDA	NDA	0.8213	
3	7212.	0.6979	2780.	6644.	620.	400.	5039.	725.	1.335	205.527	1.0	0.4	72.1
NDA	18670.	0.7824	2924.	6988.	979.	749.	10938.	1398.	1.092	12.763	6.37	0.8213	
4	NDA	IDU	NDA	NDA	NDA	NDA	IDU	NDA	NDA	NDA	NDA	NDA	NDA
NDA	NDA	IDU	NDA	NDA	NDA	NDA	IDU	NDA	NDA	NDA	NDA	0.8213	

THRUST CALCULATION DETAIL SUMMARY

ENG	FGF RFGF LBS	FGP RFGP LBS	FRAM RFRAM LBS	WIF WIP LB/SC	P25PAM PRFPA	PT7PAM PRPPA	PTMRP PTBRF	PTMBF	CGF CDF	CGP CDP	AFAN APRI FT2	RT2.5 WBA K/PPS	WFFN WH20 LB/SC	GPRI RPRI
1	NDA	NDA	NDA	NDA	NDA	NDA	NDA		NDA	NDA	20.119	NDA	NDA	NDA
	NDA	NDA	NDA	NDA	NDA	NDA	NDA	NDA	NDA	NDA	6.641	NDA	7.220	0.0
2	NDA	NDA	NDA	NDA	NDA	NDA	NDA		NDA	NDA	0.0	NDA	NDA	NDA
	NDA	NDA	NDA	NDA	NDA	NDA	NDA	NDA	NDA	NDA	0.0	NDA	7.220	0.0
3	17697.	3384.	13869.	646.	1.7034	1.3932	1.0162		0.9441	0.9473	20.119	318.	1.306	1.359
	45812.	8760.	35902.	102.	1.6954	1.3709	1.0047	1.0000	0.9698	0.9723	6.641	0.0	7.220	0.0
4	NDA	NDA	NDA	NDA	NDA	NDA	NDA		NDA	NDA	20.102	NDA	NDA	NDA
	NDA	NDA	NDA	NDA	NDA	NDA	NDA	NDA	NDA	NDA	6.644	NDA	7.220	0.0

ALL VALUES PRINTED ARE CONDITION AVERAGES

PROGRAM LIBRARY 08/11/80 PR07 CONDITION NO 4.08.015.007
DOCUMENT NO D6-22119-1
PAGE NO

ORIGINAL PAGE IS OF POOR QUALITY

125208-20-110

Table 22. Engine Fuel-Flow Data

AIRPLANE MODEL 747-100 TEST 273-15 ENGINE FUEL FLOW DATA REQUEST NO 1316.0101
AIRPLANE NUMBER RA001 DATE 10/31/80 TIME 0515
ENGINE MODEL P&WA JT9D-3/7

COORDINATION TIME	CE EN	WF (TEST VALUES)	RWF	SFC	RSFC	D TIME	DRWF	PNTS	DFFN	SWF (TEST VALUES)	ARWF	APSFC	APRSFC
		LB/HR 10^{0}	LB/HR 10^{0}	LBS/HR/LB 10^{-3}	10^{-3}	SEC 10^{-3}	PCT 10^{-1}	/LN 10^{0}	PCT 10^{-1}	LB/HR 10^{0}	LB/HR 10^{0}	LBS/HR/LB 10^{-4}	10^{-6}
11-27-40.086	3	IDU	NDA	NDA	NDA	IDU	NDA	ID	NDA				
11-27-45.086	3	5039	10938	698	782	8000	71	8	72				
AVERAGE	3	5039	10938	698	782	8000	71	8	72	IDU	IDU	IDU	IDU
NO. OF POINTS	3	1	1	1	1	1	1	1	1	0	0	0	0

PROGRAM LIBRARY 08/11/80 PR07 CONDITION NO 4.08.015.007
DOCUMENT NO D6-22119-1
PAGE NO

Table 23. Measurements for Engine Clearance

AIRPLANE MODEL 747-100 TEST 273-15 REQUEST NO 1316.0101
AIRPLANE NUMBER RA001 DATE 10/31/80 TIME 0515

COORDINATION TIME	E3 CLEARANCE HPT 21.7 DEG	E3 CLEARANCE HPT 128 DEG	E3 CLEARANCE HPT 218 DEG	E3 CLEARANCE HPT 300 DEG	E3 CLEARANCE FAN 30 DEG	E3 CLEARANCE FAN 120 DEG	E3 CLEARANCE FAN 210 DEG	E3 CLEARANCE FAN 300 DEG	E4 CLEARANCE FAN 30 DEG	E4 CLEARANCE FAN 120 DEG	E4 CLEARANCE FAN 210 DEG	E4 CLEARANCE FAN 300 DEG	TEMP M-FLNGE TIP 0 RAD	TEMP M-FLNGE TIP 60 RAD
	MILS	MILS	MILS	MILS	MILS	MILS	MILS	MILS	MILS	MILS	MILS	MILS	DEGF	DEGF
	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	5180	5181
	0.133	0.133	0.133	0.133	0.135	0.135	0.135	0.136	0.162	0.162	0.162	0.162	-0.040	-0.030
	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	0	0
HR MIN SEC	10	10	10	10	10	10	10	10	10	10	10	10	10	10
11-33-00.094	122330	475168	26711	95729	510606	114197	88564	26678	131500	46295	525126	71984	663	MP
11-33-01.094	56532	LP	20544	40145	513694	110081	97832	40017	15408	93633	202843	171755	665	MP
11-33-02.094	67841	517338	81184	71025	522960	149180	118429	57459	-22605	16451	147242	136784	665	MP
11-33-03.094	89431	LP	62683	93670	LP	78185	114310	40017	42119	-56614	133856	34955	668	MP
11-33-04.094	29802	LP	22600	26764	366478	95676	60758	26678	92460	135825	LP	119298	665	MP
11-33-05.094	69898	499853	103795	34999	469427	87445	91653	37964	137664	201687	370677	209812	668	MP
11-33-06.094	46251	429913	45211	29852	515753	79214	117399	50277	LP	238734	LP	282841	668	MP
11-33-07.094	28774	463855	-2067	49409	473544	128602	133877	61564	236291	110098	485999	182041	665	MP
11-33-08.094	103825	509110	45211	102934	LP	106994	136966	87215	116089	161553	88551	290041	665	MP
11-33-09.094	59617	513224	11294	57644	447807	81271	70027	9235	40064	44237	228584	270498	661	MP
AVERAGE	67430	486923	41717	60217	477534	103085	102982	43710	87666	99190	272860	177001	665	NDA
MINIMUM	28774	429913	-2067	26764	366478	78185	60758	9235	-22605	-56614	88551	34955	661	NDA
MAXIMUM	122330	517338	103795	102934	522960	149180	136966	87215	236291	238734	525126	290041	668	NDA
STD DEVIATION	28927	29753	31236	27432	49021	22201	24322	20670	73834	85028	155952	83668	2	NDA
NO. OF POINTS	10	7	10	10	8	10	10	10	9	10	8	10	10	0

ORIGINAL PAGE IS OF POOR QUALITY

PROGRAM LIBRARY 08/11/80 PR07 CONDITION NO 4.08.015.010
DOCUMENT NO D6-22119-1
PAGE NO

125209-20-112

Table 24. Measurements of Turbine Case Temperature

AIRPLANE MODEL 747-100 TEST 273-15 REQUEST NO 1316.0101
AIRPLANE NUMBER RA001 DATE 10/31/80 TIME 0515

COORDINATION TIME	TEMP M-FLNGE TIP 120 RAD	TEMP M-FLNGE TIP 180 RAD	TEMP M-FLNGE TIP 240 RAD	TEMP M-FLNGE TIP 300 RAD	TEMP M-FLNGE ROOT 0 RAD	TEMP M-FLNGE ROOT 60 RAD	TEMP M-FLNGE ROOT 120 RAD	TEMP M-FLNGE ROOT 180 RAD	TEMP M-FLNGE ROOT 240 RAD	TEMP M-FLNGE ROOT 300 RAD.	TEMP N-FLNGE ROOT 0 RAD	TEMP N-FLNGE ROOT 120 RAD	TEMP N-FLNGE ROOT 240 RAD	TEMP N-FLNGE TIP 0 RAD
	DEGF	DEGF	DEGF	DEGF	DEGF	DEGF	DEGF	DEGF	DEGF	DEGF	DEGF	DEGF	DEGF	DEGF
	5182	5183	5184	5185	5186	5187	5188	5189	5190	5191	5192	5193	5194	5195
	-0.020	-0.010	-0.000	0.010	0.020	0.030	0.040	0.050	-0.040	-0.030	-0.020	-0.010	-0.000	0.010
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HR MIN SEC	10	10	10	10	10	10	10	10	10	10	10	10	10	10
11-31-20.091	652	717	670	689	709	707	707	-1343	717	728	1010	792	794	754
11-31-21.091	655	726	672	691	704	707	711	-1296	715	724	1015	801	803	750
11-31-22.091	655	722	672	689	709	707	711	-1319	717	724	1017	799	801	752
11-31-23.092	650	717	668	689	707	702	707	-1380	717	726	1010	792	794	750
11-31-24.092	652	720	670	687	709	707	709	-1368	709	720	1010	792	797	754
11-31-25.092	652	717	665	691	713	711	713	-1331	715	724	1015	794	794	756
11-31-26.092	650	715	670	689	711	707	707	-1368	715	724	1021	790	797	752
11-31-27.092	652	715	670	687	707	698	709	-1355	717	726	1019	792	797	750
11-31-28.092	655	717	668	691	709	704	707	-1343	717	726	1021	792	799	752
11-31-29.092	650	717	668	687	709	702	707	-1355	715	726	1019	792	794	750
AVERAGE	652	718	669	689	709	705	709	-1346	716	725	1016	794	797	752
MINIMUM	650	715	665	687	704	698	707	-1380	709	720	1010	790	794	750
MAXIMUM	655	726	672	691	713	711	713	-1296	717	728	1021	801	803	756
STD DEVIATION	2	3	2	2	2	3	2	24	3	2	4	3	3	2
NO. OF POINTS	10	10	10	10	10	10	10	10	10	10	10	10	10	10

126208-20-113

To compute resultant airloads from the pressure data, a previously developed computer program was used. It approximates the inlet and cowl geometry as a series of conical frustums and adjusts for the tilt of the inlet axis with respect to the nacelle centerline by insertion of wedge-shaped surfaces. This procedure was checked by comparison to a method based on a complete three-dimensional geometry definition. Resultant forces differed by less than 3%, and resultant yaw and pitching moments at the engine face differed by less than 1%. (Rolling moments differed by 3.5% but are not significant loads.)

Figure 39 shows the coordinate system for the resultant loads.

Table 25 gives resultant loads along with key airplane and engine parameters for 23 flight conditions.

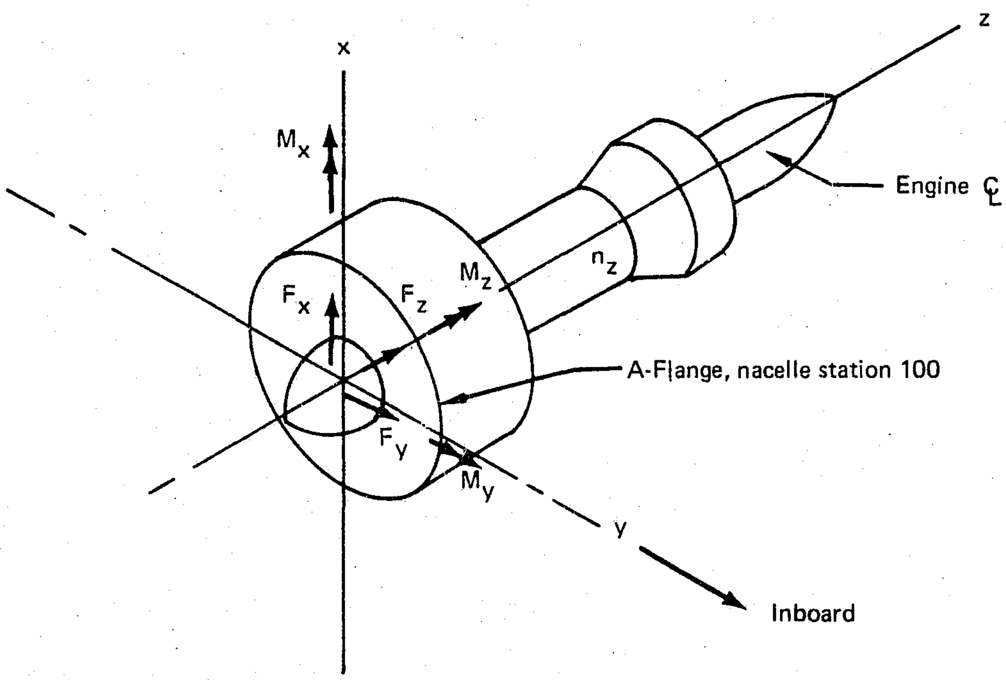
Takeoffs—Four takeoffs—one at flaps 20 deg and 612 000 lb gross weight and three at flaps 10 deg and gross weights of 538 000, 647 000, and 780 000 lb (simulated)—were selected for detailed loads analyses. For two takeoffs, time histories of resultant loads were calculated for the purpose of correlating maximum clearance changes, whenever they occurred, with the aerodynamic loads. For the 780 000 lb takeoff, which was simulated by a pullup manuever at 1000 ft above ground level, the analysis was done at the instant the correct airplane lift coefficient was reached.

The flaps 20 deg, 612 000 lb gross weight takeoff was the initial takeoff for the entire test program. Peak load was reached at inter-range instrumentation group master clock (IRIG) time 6:41:44. The pitching moment at the A-flange was 329 000 in-lb.

The 538 000 lb takeoff occurred during test 273-10, and the time history covers the IRIG span of 9:44:00 to 9:44:11. Time histories of A-flange pitching moment and airflow sensor vane angle* during the takeoff rotation are given in figure 40. The direct relationship of load to flow angle is evident. Also note that the maximum moment for this condition (401 000 in-lb) is considerably higher than the maximum for the flaps 20-deg takeoff, table 25.

*The airflow sensor vanes are mounted on both sides of the fuselage near the flight deck. The flow angles indicated by the vanes are influenced by flap setting, wing upwash, body crossflow, and other factors and should not be construed as airplane angle of attack.

C-2



125209-55-447

Figure 39. Sign Convention for Steady-State Loads, Engine 3

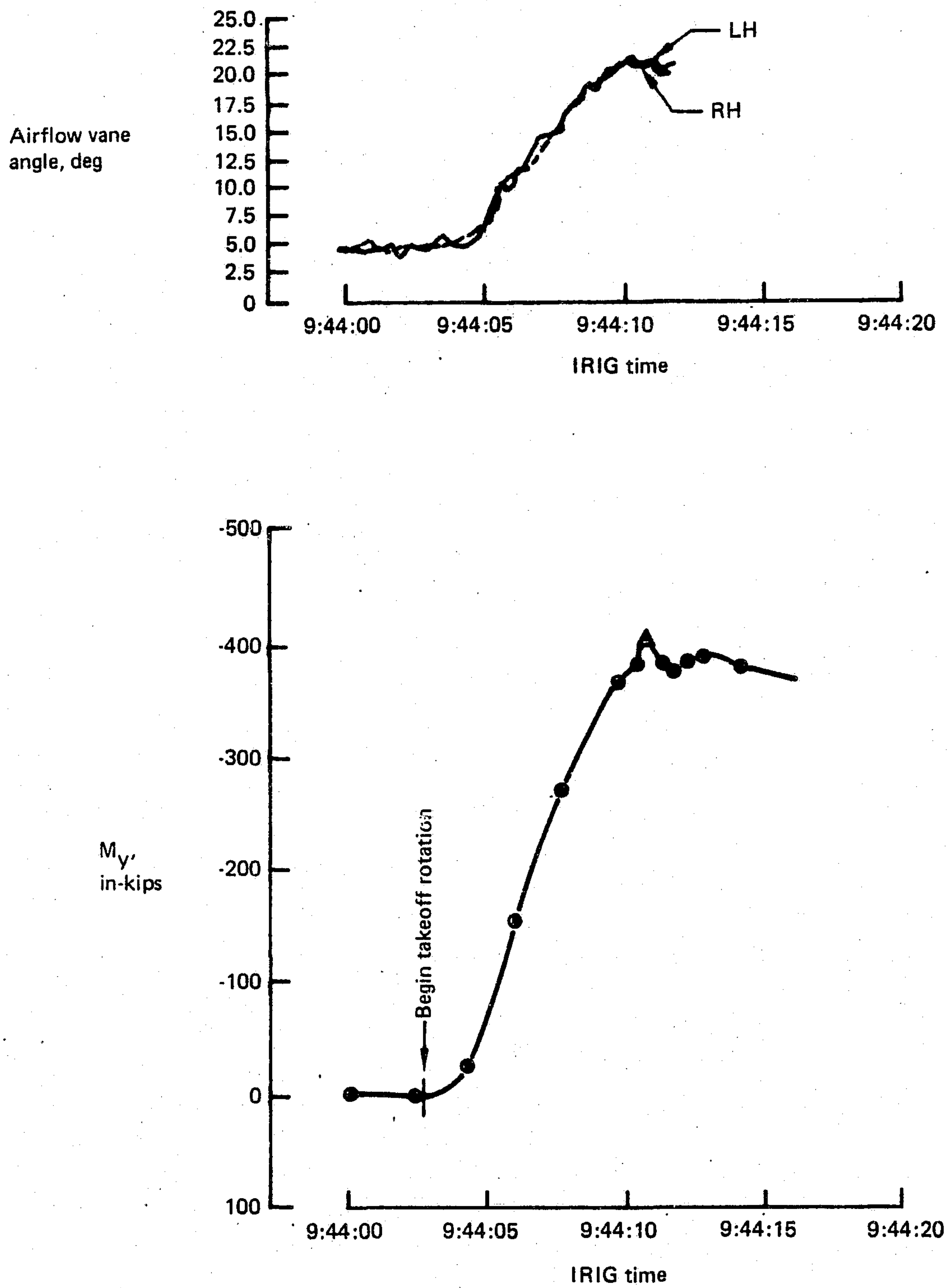
ORIGINAL PAGE IS
OF POOR QUALITY

Table 25. Engine 3 A-Flange Resultants

Condition	Air-speed, KCAS	Pressure altitude, ft	Mach number	Referred airflow, lb/s	Load factor, g	F_x, lb	F_y, lb	M_x, in-lb	M_y, in-lb
101 612K gross weight takeoff (flaps 20)	157.8	2 553	0.250	1549	1.14	6001	-2754	-147 736	-328 780
101 538K gross weight takeoff (flaps 10)	151.0	2 667	0.239	1527	1.26	7197	-2916	-152 292	-400 756
101 647K gross weight takeoff (flaps 10)	160.1	2 634	0.254	1524	1.17	7921	-3112	-159 325	-424 987
118 780K gross weight simulated takeoff (flaps 10)	183.6	3 646	0.296	1573	1.20	8344	-2757	-134 045	-430 154
102 Low climb	218.8	5 861	0.367	1539		4670	-1067	- 45 361	-206 043
103 Mid climb	290.4	17 187	0.599	1622		4084	- 588	- 25 756	-125 891
104 High M cruise	291.3	35 481	0.859	1633		2469	-1023	- 36 317	- 59 441
105 Low M cruise	258.3	35 512	0.772	1604		3478	-1131	- 42 237	-106 150
106 Max M	299.0	36 978	0.906	1642		302	- 464	- 15 779	+ 19 317
107 Inflight relight	285.7	27 859	0.721	1365		3277	-736	- 25 639	- 84 847
108 Maximum q	357.5	24 513	0.836	1617		-1410	+ 984	29 060	98 411
109 Stall warning (flaps up)	188.4	16 964	0.391	1591		5437	-1384	- 63 775	-243 214
110 Stall warning (flaps 10)	169.2	16 239	0.347	1621		6229	-2142	- 97 024	-304 770
111 Stall warning (flaps 30)	129.3	17 049	0.270	1633		3927	-1292	- 72 893	-220 730
112 Idle descent	249.7	8 450	0.439	748		4130	-1124	- 29 669	- 97 234
113 Approach	157.4	6 003	0.265	1547		3707	-1411	- 71 607	-201 854
114 Touch and go	166.5	2 561	0.263	1589		4388	-2321	-125 622	-241 654
115 Thrust reverse	113.2	2 561	0.179	1369		44	- 10	- 17 298	- 40 963
116 2.0g left turn (flaps up)	277.5	8 397	0.487	1562	1.99	7212	-3459	-133 292	-264 186
117 1.6g left turn (flaps 30)	143.0	8 202	0.260	1539	1.61	5293	-3672	-191 221	-284 557
120 2.0g right turn (flaps up)	272.1	8 240	0.476	1196	2.04	7634	-1629	- 47 455	-239 481
121 1.6g right turn (flaps 30)	151.3	8 278	0.266	1435	1.60	5416	- 359	- 10 105	-282 023
123 Airplane stall	115.7	9 000	0.207	1551		6072	-1613	- 89 181	-366 818

126209-31

ORIGINAL PAGE IS
OF POOR QUALITY



126208-35

Figure 40. Inlet Pitching Moment Time History, 538 000 lb Gross Weight Takeoff

The 647 000 lb takeoff occurred during test 273-11 between IRIG time 10:13:46 and 10:13:55. The pitching moment time history (fig. 41) shows that the maximum aerodynamic load occurred at IRIG 10:13:52, with a nose-up moment of 425 000 in-lb. The load factor was 1.17g.

The simulated high gross weight takeoff occurred during test 273-15 at IRIG 8:13:18. The actual gross weight was 696 500 lb. The simulation was achieved by performing a pullup starting at 185 kn and 3646 ft altitude (about 1000 ft above ground) to produce the same airplane lift coefficient that would occur during a 780 000 lb takeoff. (The original intention was to simulate an 820 000 lb gross weight takeoff. However, insufficient allowance was made for speed reduction due to increasing climb gradient in the pullup maneuver.) The moment at the A-flange was 430 100 in-lb.

Other Cases—Airloads for conditions other than takeoff were generally of substantially lesser magnitude. However, certain cases were analyzed in greater detail because of possible adverse combinations of aerodynamic loads and thermal transients in the engine. Figure 42 shows a time history of the pitching moment at the engine face, engine airflow, and body vane angle for condition 110 (stall warning 10 deg flaps). The maximum moment (305 000 in-lb) coincided with maximum engine airflow, although the maximum vane angle occurred earlier in the maneuver. The result shows that engine airflow is of comparable importance to angle of attack in determining inlet airloads.

Other cases given special attention were the turns at constant altitude to achieve a specified load factor. Engine clearance changes during these maneuvers were due to a combination of aerodynamic loads, g-loads, and gyroscopic loads. Condition 116, nominally a 2g turn to the left, was run during test 273-10 and achieved a load factor of 1.99 at IRIG 13:33:58. The A-flange moment was 264 200 in-lb. The indicated pitch rate was 4.29 deg/s and the yaw rate was about 2.9 deg/s on both engines. A 2g turn to the right was performed during test 273-15 (condition 120) at IRIG 11:04:03. The moment was 239 500 in-lb, pitch rate was 5.5 deg/s, and yaw rate was 2.8 deg/s. Turns of 1.6g at flaps 30 deg. were performed to the right and to the left. The left turn occurred during test 273-10, IRIG 13:41:07 (condition 117) with a moment of 284 600 in-lb, pitch rate of 6.5 deg/s, and yaw rate of 3.7 deg/s. The right turn occurred during test 273-15 (condition 121) at IRIG 11:07:25 with a moment of 282 000 in-lb, pitch rate of 7 deg/s, and yaw rate of 4.7 deg/s. Finally, an airplane stall occurred during test 273-10. The moment peaked at 367 000 in-lb at IRIG 13:26:16. This relatively high load level resulted from a very high angle of attack.

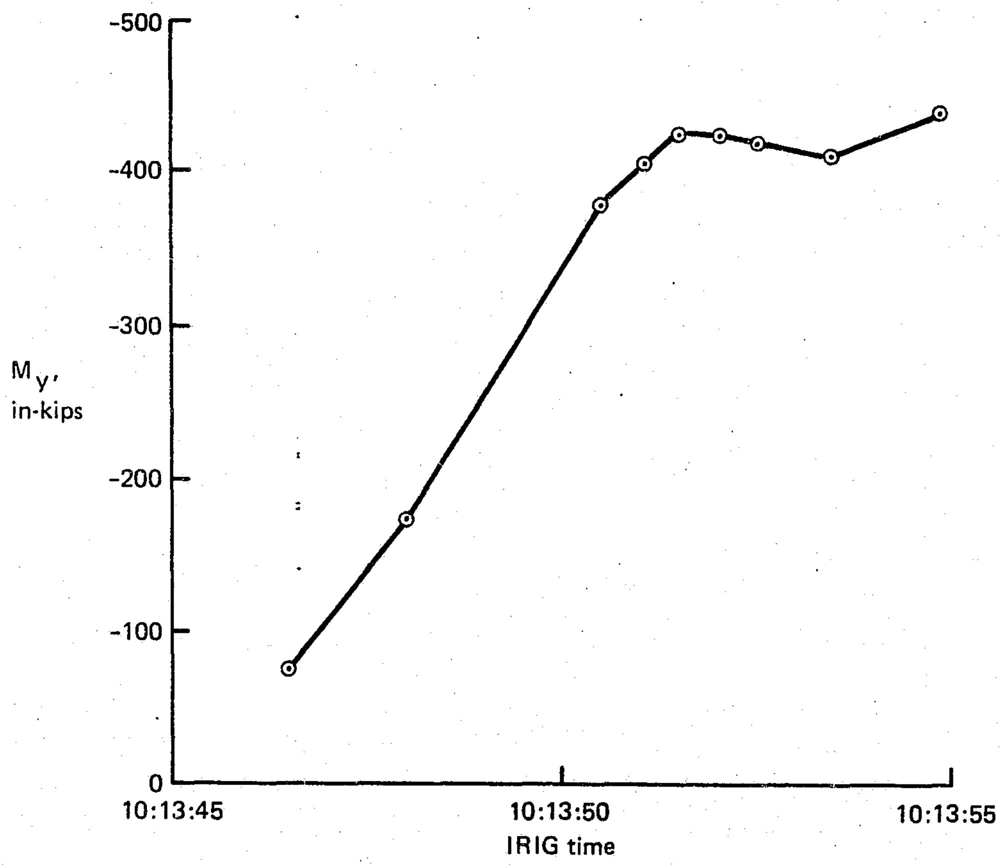
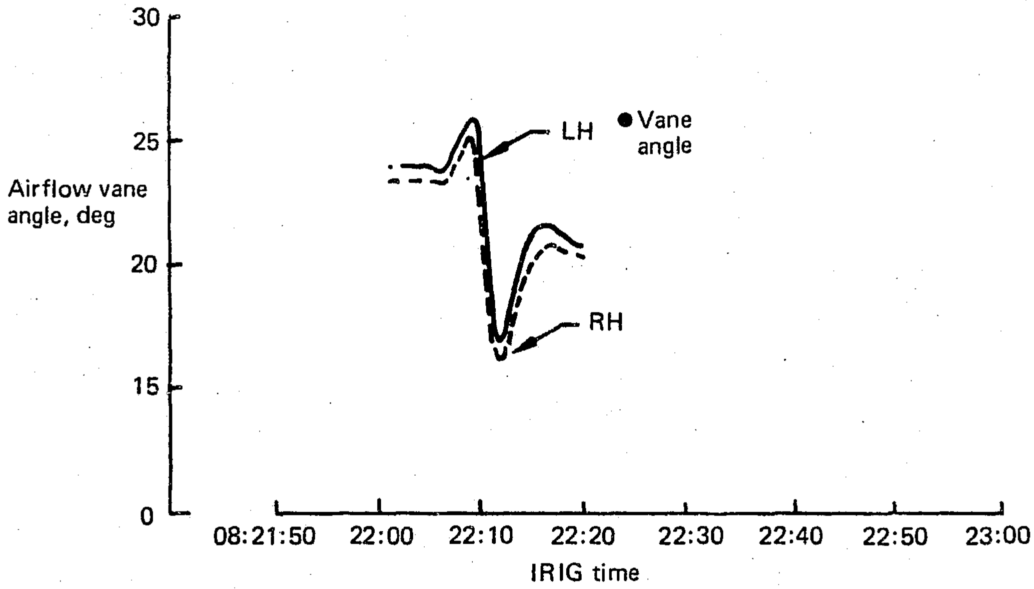
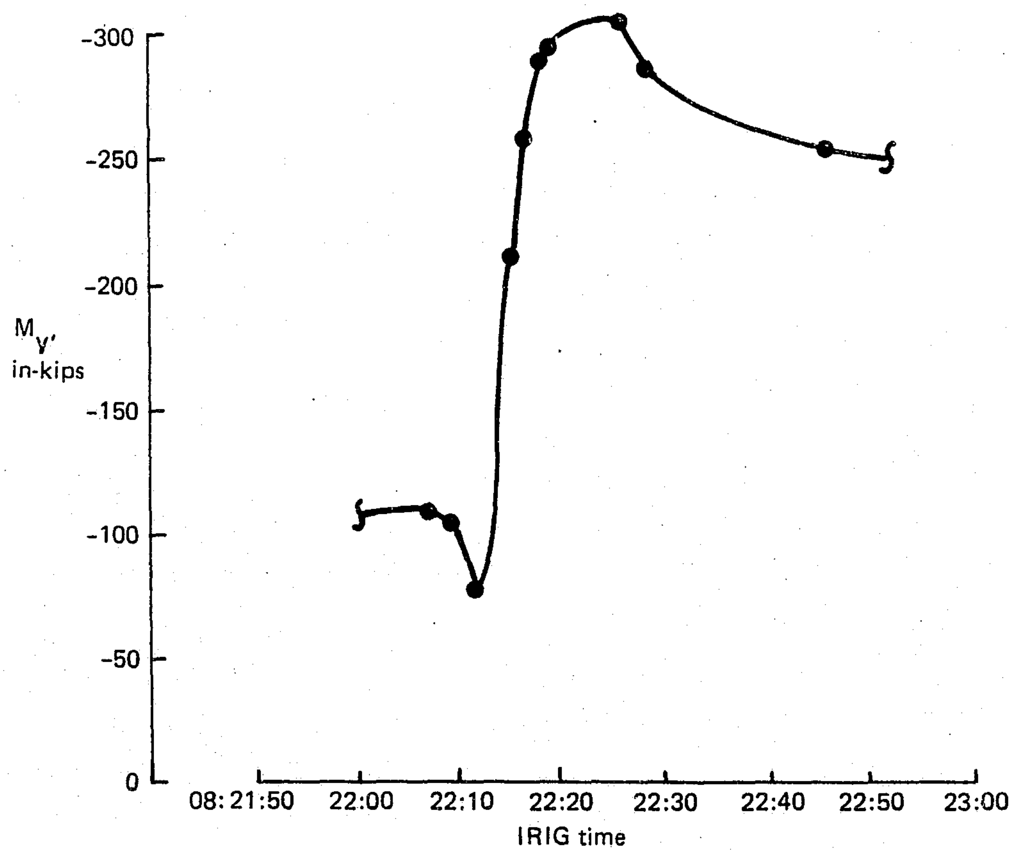


Figure 41. Inlet Airload Moment Time History, 647 000 lb Gross Weight Takeoff

125209-34





125209-33

Figure 42. Airload Moment Time History, Stall Warning Maneuver, Flaps 10

In this section all loads pertain to engine 3. Preliminary review of the test data indicated that the pressures on engine 4 were very close to the pressures of engine 3, implying that the loads were about equal. Comparison of the aerodynamic loads determined in the NAIL program with the loads predicted in task IIIA of the JT9D diagnostic program (ref. 2), indicate that:

- o The most critical loads were higher than predicted because of higher angles of attack than had been expected.

- o The cosine law for the circumferential pressure distribution assumed in task IIIA is a only a rough approximation of the actual distribution, especially in the critical region near the highlight.

- o The phase angle of the cosine distribution is about 20 deg from the vertical near the highlight and further into the inlet approaches 0 deg.

4.2.1.2 Inertial Loads

Normal accelerations measured during takeoff and flight did not exceed 1.3g except during the high-g turn maneuvers. No significant turbulence was experienced during the NAIL program. The difference between g-loads measured at the airplane center of gravity and those measured on engines 3 and 4 was within the scatter of the data. In other words, the instruments responded only to steady-state accelerations of the whole airplane, experiencing no significant contributions from wing or nacelle flexible modes.

An exception to the steady-state accelerations occurred during a hard landing in test 273-15. The airplane landed at 690 000 lb gross weight with 297 000 lb fuel and a sink rate of approximately 10 ft/s. Touchdown occurred at IRIG 8:20:49. Vertical acceleration at the airplane center of gravity was 1.53g, with peaks of 2g at engine 4 and 1.7g at engine 3. This case was selected for dynamic analysis. Another exception occurred during test 273-10 during which a mild gust was encountered at IRIG 12:11:52. Normal accelerations were 1.08g at the airplane center of gravity and 1.3g at the engines. Details of all these cases are shown in Appendix A.

Pitch rates during takeoffs did not exceed 3 deg/s, the peak value being achieved before reaching the maximum load factor.

4.2.2 Installed Propulsion System Aerodynamics

Surface static pressures were measured on the nacelle and pylon of engine 3 (inboard) and engine 4 (outboard) and on neighboring wing surfaces during three separate test flights over the span of the test period. The initial flight, test 273-09, acquired data at M = 0.77, 0.80, and 0.86 and revealed instrumentation problems, which were partially corrected for a second flight, test 237-12. The third flight, test 273-15, was flown primarily to fulfill the remaining NASA conditions, which included M = 0.91. The M = 0.91 test was not flown until the end of the NAIL program when the speed restriction was removed concerning the other Boeing developmental programs.

Data plots of the measured pressures are presented in Appendix B.

5.0 REFERENCES

1. NASA CR-159717 (PWA-5512-46), Expanded Study of Feasibility of Measuring In-Flight 747/JT9D Loads, Performance, Clearance, and Thermal Data—JT9D Jet Engine Diagnostics Program.

2. D6-34720, Report of Task III A, Short Diagnostics Test Program, Engine Component Improvement Program, JT9D Engine Diagnostics (15 November 1978)

APPENDIX A

1.0 Pressures

The locations of pressure ports on engine 3 are shown in table A-1.

The coordinate system is shown in figure A-1. The arc length from the highlight to the port under considerations is denoted by "s." Positive values signify an external port and negative values signify an internal port.

The θ coordinate is the azimuth angle measured from the top and clockwise looking at the inlet from the front.

A distinction was made between nominal values and actual values of s and θ. The nominal values s_{nom} and θ_{nom} are convenient for the computerized plotting of the data. In practice, installing the pressure taps at the nominal location was not always possible because of structural interferences. Consequently the actual s and θ are also listed. Small discrepancies in actual pressure values resulting from these location shifts were accounted for by interpolation in the pressure integration process. The axial coordinate z (the normal distance from the highlight plane) is also listed.

Several pressure tranducers gave unreliable or obviously erroneous readings. Therefore, pressures were determined by averaging values measured at adjacent ports using suitable weighting for geometric relationships. The ports for which such systematic substitutions were made are listed in table A-2. Pressures that still appeared to be erroneous after this substitution were corrected manually before they were plotted.

A complete description of the pressure distribution function $p(s,\theta)$ at any point on the inlet is required to obtain inlet loads through integration. Because pressure was measured only at the pressure taps, an interpolation scheme was needed to determine the pressure at other locations. In the circumferential direction the Fourier-Bessel formula was used:

$$p(\theta) = A_0 + \Sigma A_n \cos(n\theta) + \Sigma B_n \sin(n\theta)$$

The use of this formula leads to a $p(\theta)$ function that fits every measured point exactly and ensures maximum smoothness in between. In the s-direction a linear interpolation was used between measured points.

The coefficients A_n and B_n for all flight conditions are listed in tables A-3 to A-25. (Note that in the lip area, 12 coefficients are tabulated, because pressures were measured at 12 θ values. Elsewhere, only six coefficients are available, because only six θ values were instrumented.)

The axial pressure distributions for each flight condition and value of θ are shown graphically in figures A-2 to A-47. The pressures are plotted in terms of pressure coefficient versus nominal arc lengths. Each flight condition is covered by two pages, one (inlet pressures) pertaining to the rows of pressure ports that extend all the way into the inlet (i.e., θ = 0 deg, 60 deg) and the other (cowl pressures) pertaining to the rows that extend to the trailing edge of the fan cowl (i.e., θ = 30 deg, 90 deg).

On engine 4, pressure taps were installed at three circumferential locations, θ = 60 deg, 180 deg, and 300 deg. Axial pressure distributions are shown in figures A-48 to A-70. No Fourier-Bessel coefficients were calculated for this engine because no integration was carried out. The pressures were measured mainly for the purpose of comparison with engine 3 pressures. Note that for some of the test conditions the power level of engine 4 was considerably different from engine 3.

2.0 INERTIAL LOADS

Recorded accelerations on inlets and strut-wing intersections are presented in figures A-71 to A-83 for both engines for conditions when dynamically interesting events occurred:

- Mild gust during test 273-10
- Hard landing during test 273-15

The graphs show airplane parameters measured at airplane center of gravity and engine accelerations and angular rates. Engine accelerations were filtered to pass only frequencies below 40 Hz. Pitch and yaw rates were filtered to 5 Hz.

Table A-1. Engine 3 Pressure Port Locations

PORT NO.	NOM S (IN)	ROW NO. 1 NOMINAL THETA= 0. DEG Z (IN)	S (IN)	THETA (DEG)	ROW NO. 2 NOMINAL THETA= 30. DEG Z (IN)	S (IN)	THETA (DEG)	ROW NO. 3 NOMINAL THETA= 60. DEG Z (IN)	S (IN)	THETA (DEG)	ROW NO. 4 NOMINAL THETA= 90. DEG Z (IN)	S (IN)	THETA (DEG)
1	-56.50	55.23	-57.68	1.64				53.60	-56.05	58.30			
2	-51.21	46.98	-49.38	1.54				47.74	-50.15	61.35			
3	-44.21	41.50	-43.80	1.71				42.04	-44.35	58.30			
4	-38.21	36.04	-38.23	1.55				36.25	-38.45	61.42			
5	-32.21	31.12	-33.23	-1.19				31.14	-33.25	58.68			
6	-28.21	25.69	-27.73	1.15				25.81	-27.85	61.19			
7	-24.21	21.22	-23.23	-1.23				21.39	-23.40	58.64			
8	-20.21	18.48	-20.48	1.17				18.65	-20.65	61.10			
9	-17.21	15.78	-17.78	-1.24				15.95	-17.95	58.65			
10	-14.21	11.29	-13.28	1.10				11.50	-13.50	60.69			
11	-11.00	8.49	-10.48	1.23	8.61	-10.60	30.00	8.61	-10.60	60.00	8.51	-10.50	90.00
12	-8.00	5.58	-7.53	1.02	5.55	-7.50	30.00	5.48	-7.43	60.92	5.55	-7.50	90.00
13	-5.50	3.61	-5.48	0.00	3.63	-5.50	30.00	3.66	-5.53	60.00	3.63	-5.50	90.00
14	-3.00	1.41	-3.00	0.00	1.41	-3.00	30.00	1.45	-3.05	60.00	1.41	-3.00	90.00
15	-1.00	.17	-1.00	0.00	.17	-1.00	30.00	.19	-1.05	60.00	.17	-1.00	90.00
16	0.00	0.00	0.00	0.00	0.00	0.00	30.00	0.00	0.00	60.00	0.00	0.00	90.00
17	1.00	.32	1.00	0.00	.32	1.00	30.00	.29	.95	60.00	.32	1.00	90.00
18	2.00	1.16	2.00	0.00	1.11	1.95	30.00	1.11	1.95	60.00	1.16	2.00	90.00
19	4.00	3.01	4.00	0.00	2.96	3.95	30.00	2.96	3.95	60.00	3.01	4.00	90.00
20	6.00	8.17	9.40	-.80	6.42	7.60	30.00	6.42	7.60	60.00	6.62	7.81	90.00
21	9.00	11.72	13.00	.68	9.82	11.08	30.00	9.84	11.10	60.00	9.93	11.19	90.00
22	13.69	15.39	16.70	-.62	13.98	15.28	30.00	13.90	15.20	60.00	14.08	15.38	90.00
23	19.00				18.95	20.28	30.00				19.05	20.38	90.00
24	25.00				23.93	25.28	30.00				24.03	25.38	90.00
25	31.00				29.37	30.73	30.00				29.52	30.88	90.00
26	38.00				37.91	39.28	30.00				37.39	38.76	90.00
27	50.00				51.65	53.02	30.00				50.08	51.45	90.00
28	62.00				60.63	62.00	30.00				60.63	62.00	90.00
29	74.26				72.86	74.26	30.00				70.71	72.10	90.00
30	77.00				75.59	77.00	30.00				75.59	77.00	90.00
31	98.13				96.58	98.13	30.00				93.95	95.49	90.00
32	107.94				106.39	107.94	30.00				106.39	107.94	90.00

125208-20-114 (1 of 3)

Table A-1. Engine 3 Pressure Port Locations (Continued)

PORT NO.	NOM S (IN)	ROW NO. 5 NOMINAL THETA=120. DEG Z (IN)	S (IN)	THETA (DEG)	ROW NO. 6 NOMINAL THETA=150. DEG Z (IN)	S (IN)	THETA (DEG)	ROW NO. 7 NOMINAL THETA=180. DEG Z (IN)	S (IN)	THETA (DEG)	ROW NO. 8 NOMINAL THETA=210. DEG Z (IN)	S (IN)	THETA (DEG)
1	-56.50	53.32	-55.77	118.18				51.53	-53.97	178.17			
2	-51.21	47.61	-50.02	121.16				48.92	-51.34	180.99			
3	-44.21	41.97	-44.27	118.11				41.01	-43.30	178.10			
4	-38.21	36.32	-38.52	121.22				35.80	-37.99	181.14			
5	-32.21	31.28	-33.39	118.72				30.97	-33.08	178.68			
6	-28.21	25.85	-27.89	121.01				25.60	-27.64	181.09			
7	-24.21	21.44	-23.45	118.64				21.19	-23.20	178.63			
8	-20.21	18.70	-20.70	121.03				18.45	-20.45	181.21			
9	-17.21	15.95	-17.95	118.62				15.70	-17.70	178.62			
10	-14.21	11.64	-13.64	120.00				11.40	-13.39	180.00			
11	-11.00	8.77	-10.76	120.00	8.63	-10.62	150.00	8.52	-10.51	180.00	8.63	-10.62	210.00
12	-8.00	5.92	-7.88	120.00	5.36	-7.31	150.00	5.43	-7.38	180.00	5.36	-7.31	210.00
13	-5.50	3.63	-5.50	120.00	3.63	-5.50	150.00	3.63	-5.50	180.00	3.69	-5.56	210.00
14	-3.00	1.41	-3.00	120.00	1.41	-3.00	150.00	1.41	-3.00	180.00	1.46	-3.06	210.00
15	-1.00	.17	-1.00	120.00	.18	-1.03	150.00	.17	-1.00	180.00	.20	-1.06	210.00
16	0.00	0.00	0.00	120.00	0.00	0.00	150.00	0.00	0.00	180.00	0.00	0.00	210.00
17	1.00	.32	1.00	120.00	.32	1.00	150.00	.31	.98	180.00	.32	1.00	210.00
18	2.00	1.16	2.00	120.00	1.16	2.00	150.00	1.11	1.95	180.00	1.11	1.95	210.00
19	4.00	3.01	4.00	120.00	3.01	4.00	150.00	2.96	3.95	180.00	2.96	3.95	210.00
20	6.00	7.98	9.20	119.21	6.47	7.65	150.00	6.71	7.90	180.00	6.42	7.60	210.00
21	9.00	11.06	12.33	120.51	9.89	11.15	150.00	9.84	11.10	180.00	9.82	11.08	210.00
22	13.69	14.78	16.08	119.20	15.29	16.60	150.00	14.00	15.30	180.00	15.27	16.58	210.00
23	19.00				19.27	20.60	150.00				19.25	20.58	210.00
24	25.00				23.95	25.30	150.00				23.88	25.23	210.00
25	31.00				29.42	30.78	150.00				29.35	30.71	210.00
26	38.00				36.71	38.08	150.00				36.64	38.01	210.00
27	50.00				48.82	50.19	150.00				48.74	50.11	210.00
28	62.00				60.63	62.00	150.00				60.63	62.00	210.00
29	74.26				68.50	69.88	150.00				68.50	69.88	210.00
30	77.00				75.59	77.00	150.00				75.59	77.00	210.00
31	98.13				91.01	92.53	150.00				91.01	92.53	210.00
32	107.94				106.39	107.94	150.00				106.39	107.94	210.00

ORIGINAL PAGE IS OF POOR QUALITY

125208-20-114 (2 of 3)

Table A-1. Engine 3 Pressure Port Locations (Concluded)

PORT NO.	NOM S (IN)	ROW NO. 9 NOMINAL THETA=240. DEG Z (IN)	S (IN)	THETA (DEG)	ROW NO. 10 NOMINAL THETA=270. DEG Z (IN)	S (IN)	THETA (DEG)	ROW NO. 11 NOMINAL THETA=300. DEG Z (IN)	S (IN)	THETA (DEG)	ROW NO. 12 NOMINAL THETA=330. DEG Z (IN)	S (IN)	THETA (DEG)
1	-56.50	53.34	-55.79	238.18				53.92	-56.37	298.30			
2	-51.21	47.63	-50.04	241.08				48.45	-50.87	301.84			
3	-44.21	41.99	-44.29	238.03				42.65	-44.97	298.24			
4	-38.21	36.34	-38.54	241.22				36.86	-39.07	301.61			
5	-32.21	31.40	-33.51	238.84				31.76	-33.88	298.93			
6	-28.21	25.97	-28.01	241.13				26.39	-28.44	301.18			
7	-24.21	21.50	-23.51	238.80				21.49	-23.50	298.89			
8	-20.21	18.76	-20.76	241.21				18.75	-20.75	301.21			
9	-17.21	16.01	-18.01	238.79				16.00	-18.00	298.89			
10	-14.21	11.54	-13.54	240.69				11.50	-13.50	299.31			
11	-11.00	8.58	-10.57	240.69	8.95	-10.94	270.00	8.51	-10.50	300.00	8.61	-10.60	330.00
12	-8.00	5.65	-7.60	240.68	6.01	-7.97	270.00	5.55	-7.50	300.68	5.55	-7.50	330.00
13	-5.50	3.60	-5.47	240.00	4.05	-5.94	270.00	3.57	-5.44	300.00	3.58	-5.45	330.00
14	-3.00	1.37	-2.94	240.00	1.41	-3.00	270.00	1.41	-3.00	300.00	1.41	-3.00	330.00
15	-1.00	.17	-1.00	240.00	.17	-1.00	270.00	.17	-1.00	300.00	.19	-1.05	330.00
16	0.00	0.00	0.00	240.00	0.00	0.00	270.00	0.00	0.00	300.00	0.00	0.00	330.00
17	1.00	.32	1.00	240.00	.30	.97	270.00	.32	1.00	300.00	.32	1.00	330.00
18	2.00	1.16	2.00	240.00	1.10	1.94	270.00	1.14	1.98	300.00	1.16	2.00	330.00
19	4.00	2.98	3.97	240.00	2.98	3.97	270.00	2.99	3.98	300.00	2.99	3.98	330.00
20	6.00	8.06	9.28	240.57	6.72	7.91	270.00	6.45	7.63	300.00	6.45	7.63	330.00
21	9.00	10.95	12.22	239.22	9.87	11.13	270.00	9.87	11.13	300.00	9.82	11.08	330.00
22	13.69	14.73	16.03	240.63	14.02	15.32	270.00	14.00	15.30	300.00	13.98	15.28	330.00
23	19.00				18.99	20.32	270.00				19.95	21.28	330.00
24	25.00				23.97	25.32	270.00				23.93	25.28	330.00
25	31.00				29.46	30.82	270.00				29.37	30.73	330.00
26	38.00				37.38	38.75	270.00				37.86	39.23	330.00
27	50.00				50.05	51.42	270.00				51.16	52.53	330.00
28	62.00				60.63	62.00	270.00				60.63	62.00	330.00
29	74.26				70.71	72.10	270.00				72.86	74.26	330.00
30	77.00				75.59	77.00	270.00				75.59	77.00	330.00
31	98.13				93.95	95.49	270.00				96.58	98.13	330.00
32	107.94				106.39	107.94	270.00				106.39	107.94	330.00

ORIGINAL PAGE IS OF POOR QUALITY

125209-20-114 (3 of 3)

Table A-2. Pressure Corrections for Instrumentation Problems

Engine 3

Row No.	θ (deg)	Port No.	Averaged from: Row, port	Row, port	Row, port	Row, port
1	0	None	—	—	—	—
2	30	29	2, 28	2, 30	—	—
3	60	2	3, 1	3, 3	—	—
3	60	11	3, 10	3, 12	2, 11	4, 11
3	60	14	3, 13	3, 15	2, 14	4, 14
4	90	15	4, 14	4, 16	3, 15	5, 15
4	90	29	4, 28	4, 30	—	—
5	120	None	—	—	—	—
6	150	None	—	—	—	—
7	180	12	7, 11	7, 13	6, 12	8, 12
7	180	15	7, 14	7, 16	6, 15	8, 15
7	180	22	7, 21	6, 22	8, 22	(6,23 and 8,23)
8	210	29	8, 28	8, 30	—	—
9	240	18	9, 17	9, 19	8, 18	10, 18
10	270	None	—	—	—	—
11	300	20	10, 20	12, 20	—	—
11	300	21	10, 21	12, 21	—	—
11	300	22	10, 22	12, 22	—	—
12	330	None	—	—	—	—

Engine 4

1	60	None	—	—	—	—
2	180	9	2, 8	2, 10	—	—
3	300	None	—	—	—	—

125209-53-423

Table A-3.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 101,612K GROSS WEIGHT TAKEOFF (FLAPS 20) **TEST 273-7 IRIG 6:41:44.1**

ALTITUDE= 2553. FT MACH NUMBER= 0.250 CORRECTED AIRFLOW= 1549. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	-1.2155	.3119	.0146	.0234				-.0430	-.0140			
2	48.789	-1.3906	.2381	-.0004	.0051				-.0210	-.0054			
3	41.907	-1.6120	.2576	-.0260	-.0084				.0032	-.0303			
4	36.019	-1.9477	.2542	-.0061	.0324				-.0476	-.0215			
5	30.118	-2.2990	.2968	.0196	-.0104				-.0643	-.0505			
6	26.166	-2.6569	.3170	.0003	-.0089				-.0507	-.0315			
7	22.196	-2.8691	.3810	-.0294	.0439				-.1621	.0044			
8	18.211	-3.0263	.5413	-.0444	.0125				-.1605	-.0147			
9	15.214	-3.1147	.5896	-.0048	.0364				-.1560	.0239			
10	12.215	-3.8102	1.0192	.1093	-.0320				-.3971	.0037			
11	9.009	-4.2116	1.4903	.0074	.0131	.0029	-.0497	.0968	-.5364	.0359	.0482	-.0644	-.0519
12	6.037	-4.0698	1.5537	.1062	-.0335	-.0354	-.0316	-.0397	-.6884	-.0351	.0737	-.0016	-.0289
13	3.629	-4.3663	1.9624	.6032	-.2771	-.1258	.1087	-.0005	-1.2983	.3021	.3394	-.2346	.0166
14	1.413	-4.3156	2.8146	.1469	-.0137	-.2537	.2514	-.0530	-1.3425	.2629	.1134	-.0742	-.0195
15	.172	-2.9354	3.1801	-.2193	-.0289	.0936	-.1965	.0909	-1.3118	.3535	-.0144	.1506	-.0637
16	0.000	-1.4110	2.1947	-.1535	-.0587	-.0473	.0702	-.0523	-1.0283	.3037	.1385	-.0803	.0319
17	.324	-.0637	.4952	-.0949	-.0129	-.0846	.0261	.0631	-.2368	.1588	-.0456	-.0404	.0421
18	1.156	.3181	-.0823	-.0761	-.0202	.0187	.0133	.0003	.0233	.0945	.0078	.0198	-.0312
19	3.007	.3003	-.3196	-.0635	-.0178	-.0129	-.0023	.0034	.1049	.0440	-.0096	.0086	.0038
20	4.886	.2268	-.3380	-.0372	-.0107	.0039	-.0109	.0037	.1378	.0187	-.0131	.0038	.0137
21	7.782	.1246	-.3177	-.0291	-.0103	-.0066	-.0086	-.0024	.1637	-.0008	.0003	.0117	.0087
22	12.404	.0544	-.2180	.0113	.0082	.0055	.0372	-.0113	.0922	-.0459	-.0126	-.0073	.0285
23	17.679	.0430	-.2286	0.0000					.0863	-.0635	-.0034		
24	23.652	.0145	-.1748	.0135					.0906	-.0537	-.0101		
25	29.638	.0086	-.1570	.0232					.0961	-.0486	.0013		
26	36.633	-.0052	-.1361	.0204					.0918	-.0652	-.0006		
27	48.631	-.0309	-.1192	.0436					.0892	-.0652	.0030		
28	60.627	-.0337	-.0807	.0618					.1378	-.0275	.0052		
29	72.863	-.0060	-.0520	.0595					.1472	-.0155	.0105		
30	75.593	.0000	-.0304	.0592					.1466	-.0251	.0092		
31	96.576	.0293	-.0141	.0662					.1374	-.0283	.0118		
32	106.386	.0511	-.0079	.0888					.1764	-.0088	-.0094		

ORIGINAL PAGE IS OF POOR QUALITY

125209-39

Table A-4.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 101, 538K GROSS WEIGHT TAKEOFF (FLAPS 10) TEST 273-10 IRIG 9:44:10.6
ALTITUDE= 2667. FT MACH NUMBER= 0.239 CORRECTED AIRFLOW= 1527. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	-1.2653	.3071	-.0549	.0249				-.0712	-.0121			
2	48.789	-1.3992	.2962	-.0397	-.0062				-.0425	-.0284			
3	41.907	-1.6332	.2481	-.0563	.0022				-.0177	-.0165			
4	36.019	-1.9373	.2790	-.0019	.0212				-.0430	-.0299			
5	30.118	-2.3164	.3508	.0058	.0195				-.0648	-.0008			
6	26.166	-2.6013	.3550	.0016	.0049				-.0598	-.0293			
7	22.196	-2.8569	.4149	-.0036	.0559				-.1693	.0894			
8	18.211	-2.9484	.5920	-.0211	.0341				-.1532	-.0442			
9	15.214	-3.1305	.7117	.0038	.0340				-.2336	.0324			
10	12.215	-3.8406	1.2550	.1704	-.0939				-.4454	.0724			
11	9.009	-4.1913	1.7501	-.0297	.0027	.0500	-.0423	.0927	-.5449	-.0015	.1030	-.0588	-.0604
12	6.037	-4.0980	1.8066	.1379	-.0313	-.0405	.0238	-.0642	-.6428	-.0799	.1595	-.0347	-.0187
13	3.629	-4.5839	2.6442	.3778	-.2160	-.0388	-.1472	.1628	-1.4150	.4223	.0978	.0032	-.1877
14	1.413	-4.7194	3.7211	-.0555	-.0483	-.1750	.1417	-.0296	-1.4491	.3750	.0895	-.0840	.0324
15	.172	-3.2315	3.6531	-.2892	-.0954	.0708	-.1682	.0591	-1.2313	.2295	.1154	.0828	-.0231
16	0.000	-1.7403	2.7211	-.2188	-.1229	.0127	.0684	-.0513	-1.0410	.2934	.1820	-.1418	.0597
17	.324	-.2774	.7305	-.2459	-.0211	-.1305	-.0225	.0478	-.2813	.2052	.0497	-.0449	.0471
18	1.156	.1644	-.0169	-.1002	-.0148	.0333	.0348	.0127	-.0230	.1370	.0445	-.0250	.0038
19	3.007	.2374	-.3167	-.0641	-.0161	-.0201	.0043	.0064	.0668	.0568	.0037	-.0085	-.0044
20	4.886	.1857	-.3403	-.0080	.0100	.0135	.0184	.0022	.0662	.0201	-.0174	-.0029	.0170
21	7.782	.1008	-.3458	-.0147	-.0081	.0094	.0007	-.0048	.1274	.0085	-.0052	.0030	.0255
22	12.404	.0146	-.2831	.0307	.0201	-.0142	.0512	-.0038	.0848	-.0837	-.0187	-.0263	.0154
23	17.679	-.0234	-.2524	.0198					.1302	-.0508	-.0191		
24	23.652	-.0187	-.2366	.0385					.0723	-.0823	-.0073		
25	29.638	-.0355	-.2049	.0750					.1159	-.0452	-.0075		
26	36.633	-.0448	-.1673	.0598					.0879	-.0922	-.0126		
27	48.631	-.0767	-.1374	.0853					.1136	-.0837	-.0170		
28	60.627	-.0714	-.0935	.0944					.1330	-.0540	-.0089		
29	72.863	-.0431	-.0759	.0913					.1568	-.0498	.0037		
30	75.593	-.0441	-.0493	.0950					.1554	-.0560	.0057		
31	96.576	-.0207	-.0235	.0940					.1592	-.0487	.0083		
32	106.386	-.0323	-.0260	.0900					.2041	-.0932	-.0229		

125209-40

Table A-5.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 101, 647K GROSS WEIGHT TAKEOFF (FLAPS 10) TEST 273-11 IRIG 10:13:51.6

ALTITUDE= 2634. FT MACH NUMBER= 0.254 CORRECTED AIRFLOW= 1524. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	-1.1682	.3417	-.0027	.0336				-.0683	-.0306			
2	48.789	-1.3738	.3132	-.0032	.0087				-.0804	.0020			
3	41.907	-1.5479	.2544	-.0257	.0001				-.0415	-.0630			
4	36.019	-1.8756	.3278	-.0046	.0356				-.1005	.0162			
5	30.118	-2.1989	.3315	.0338	-.0029				-.0499	-.0336			
6	26.166	-2.5647	.4222	-.0212	-.0037				-.0616	.0096			
7	22.196	-2.7454	.4341	-.0656	.0762				-.1777	.0237			
8	18.211	-2.8934	.6924	-.0494	.0088				-.1678	.0059			
9	15.214	-3.0146	.7777	.0082	.0631				-.2265	.0262			
10	12.215	-3.4489	1.1173	-.1317	.1900				.0202	-.4123			
11	9.009	-4.0966	1.8516	.0094	-.0058	.0341	-.1217	.1208	-.5931	.0463	.0575	-.0637	-.0718
12	6.037	-3.9634	1.9817	.0920	-.0375	-.0713	-.0389	-.0367	-.6650	-.0864	.1003	-.0205	-.0614
13	3.629	-4.5242	2.8427	.4280	-.2135	-.0373	-.1371	.1100	-1.5506	.5411	.1307	.0475	-.2022
14	1.413	-4.4928	3.8458	.0054	-.0559	-.1744	.1488	-.0625	-1.5912	.4465	.0469	-.0513	.0122
15	.172	-3.0392	3.7371	-.2515	-.1036	.0934	-.1493	.0498	-1.3862	.3472	.1555	.0480	.0218
16	0.000	-1.6151	2.6195	-.2755	-.1482	-.0318	.0585	-.0550	-1.0690	.3829	.2037	-.1119	.0742
17	.324	-.2419	.6023	-.2376	-.0421	-.1072	-.0068	.0367	-.2042	.2544	.0197	-.0335	.0541
18	1.156	.1822	-.1747	-.1549	-.0489	.0174	.0197	-.0109	.0344	.1177	.0121	.0189	-.0269
19	3.007	.2296	-.3961	-.0913	-.0161	.0140	-.0115	-.0056	.1356	.0509	.0031	-.0171	-.0155
20	4.886	.1529	-.4372	-.0466	.0226	-.0313	.0223	.0017	.1823	.0319	-.0114	-.0037	.0009
21	7.782	.0798	-.4271	-.0156	-.0120	-.0156	.0051	-.0017	.2035	.0038	-.0135	.0053	.0093
22	12.404	.0170	-.3032	.0271	.0206	-.0062	.0471	-.0110	.0982	-.0764	.0065	.0054	.0256
23	17.679	-.0044	-.2827	.0079					.1186	-.0852	-.0192		
24	23.652	-.0023	-.2548	.0428					.0817	-.0983	-.0133		
25	29.638	-.0136	-.2220	.0561					.0940	-.0673	.0040		
26	36.633	-.0399	-.1883	.0574					.1017	-.1119	-.0104		
27	48.631	-.0703	-.1589	.0924					.1309	-.1000	-.0151		
28	60.627	-.0722	-.1083	.1073					.1557	-.0680	-.0083		
29	72.863	-.0359	-.0866	.1029					.1736	-.0582	.0062		
30	75.593	-.0356	-.0580	.1006					.1781	-.0662	.0043		
31	96.576	-.0390	.0305	.0676					.1499	.0015	-.0245		
32	106.386	.0101	-.0054	-.0060					-.0006	.0013	-.0008		

ORIGINAL PAGE IS OF POOR QUALITY

12520941

Table A-6.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 118, 780K GROSS WEIGHT SIMULATED TAKEOFF (FLAPS 10) TEST 273-15 IRIG 8:13:18

ALTITUDE= 3646. FT MACH NUMBER= 0.296 CORRECTED AIRFLOW= 1573. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	-1.0658	.2357	-.0487	.0043				-.0511	-.0371			
2	48.789	-1.2145	.2617	-.0283	-.0212				-.0360	-.0636			
3	41.907	-1.4520	.2082	-.0414	-.0112				-.0417	-.0414			
4	36.019	-1.7687	.2827	-.0251	.0086				-.0353	-.0570			
5	30.118	-2.1792	.3493	.0394	.0066				-.0464	-.0345			
6	26.166	-2.5309	.3831	-.0135	-.0002				-.0044	-.0521			
7	22.196	-2.7464	.4463	.0118	.0485				-.1839	.0752			
8	18.211	-2.8955	.6903	-.0743	.0268				-.1275	-.0198			
9	15.214	-2.9756	.7710	-.0093	.0225				-.1303	.1602			
10	12.215	-3.7718	1.3369	.0804	-.0733				-.3818	.0373			
11	9.009	-4.2763	2.2764	-.2362	.1502	-.0321	-.0447	.0705	-.5323	.1741	-.0806	.0276	-.0711
12	6.037	-3.9914	2.1040	.0375	.0621	-.1527	.0052	-.0327	-.6146	.0014	.0353	.1024	-.0450
13	3.629	-4.2421	2.7305	.3743	-.1155	-.1397	-.0054	.1165	-1.2524	.3448	.1426	.0312	-.2625
14	1.413	-3.8926	3.4801	.0424	-.0391	-.1942	.1736	-.0619	-1.1541	.2641	.1348	-.1010	.0120
15	.172	-2.2986	3.3849	-.3661	-.0934	.0689	-.1775	.0850	-1.0637	.2980	.0390	.0876	-.0821
16	0.000	-.8760	2.0301	-.3551	-.0981	-.0445	.0584	-.0269	-.6930	.2875	.1214	-.0967	.0406
17	.324	.0981	.0284	-.3467	-.0656	-.1547	.0054	.0433	-.0171	.2260	-.0239	-.0690	.0527
18	1.156	.3123	-.4925	-.2092	-.0520	-.0071	.0173	-.0125	.0906	.1281	.0264	-.0328	.0007
19	3.007	.2976	-.5296	-.0585	.0201	-.0447	-.1132	-.0426	.1920	.1225	.1235	.1170	.0530
20	4.886	.2613	-.4006	-.0273	-.0857	-.1029	-.1067	-.0425	.0631	-.1013	-.0711	-.0195	.0148
21	7.782	.1733	-.3213	.0017	-.1422	-.1659	-.1260	-.0636	.0248	-.2268	-.1764	-.0958	.0105
22	12.404	-.0570	-.3728	.0485	.0482	.0072	.0559	-.0146	.0983	-.1058	-.0547	-.0381	.0082
23	17.679	-.1053	-.3663	.0369					.1068	-.0573	-.0029		
24	23.652	-.0759	-.3300	.0275					.0845	-.0703	-.0138		
25	29.638	-.0945	-.2570	.0934					.1405	-.0360	.0049		
26	36.633	-.1000	-.2093	.0554					.0943	-.0998	-.0078		
27	48.631	-.1313	-.1711	.0995					.1267	-.0816	-.0144		
28	60.627	-.1191	-.1096	.1233					.1778	-.0329	-.0130		
29	72.363	-.0760	-.0836	.1066					.1997	-.0365	.0065		
30	75.593	-.0587	-.0430	.1071					.1978	-.0323	.0033		
31	96.576	-.0097	-.0070	.1204					.1888	-.0189	.0184		
32	106.386	.0649	.0164	.0483					.0842	-.0285	.0834		

ORIGINAL PAGE IS
OF POOR QUALITY

12520942

Table A-7.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 102, LOW CLIMB TEST 273-10 IRIG 9:45:59

ALTITUDE= 5861. FT MACH NUMBER= 0.367 CORRECTED AIRFLOW= 1539. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	-.4769	.1437	-.0122	.0169				-.0139	-.0289			
2	48.789	-.6266	.1112	.0180	-.0066				-.0251	-.0048			
3	41.907	-.8567	.1413	-.0007	.0078				.0073	-.0211			
4	36.019	-1.1651	.1434	.0176	.0277				-.0286	.0187			
5	30.118	-1.4941	.2197	.0317	.0086				.0059	.0002			
6	26.166	-1.7904	.1788	.0309	-.0002				.0009	.0099			
7	22.196	-1.9869	.2048	.0167	.0362				-.0754	.0745			
8	18.211	-2.0864	.3633	-.0114	-.0093				-.0231	-.0012			
9	15.214	-2.1862	.3478	.0303	-.0077				-.0273	.0278			
10	12.215	-2.6789	.6373	-.0491	.0397				.0092	-.1341			
11	9.009	-2.9348	.9972	.0176	-.0188	-.0007	-.0286	.0402	-.1414	.0236	.0349	-.0453	-.0276
12	6.037	-2.7238	.9553	.0522	-.0344	-.0124	-.0190	-.0253	-.2150	-.0275	.0447	.0239	-.0455
13	3.629	-2.5197	1.0965	.2600	-.0411	-.0965	-.0155	.0571	-.4138	.0654	.1540	-.0161	-.1140
14	1.413	-1.8334	1.4002	.0872	-.0382	-.1115	.0554	.0105	-.3240	.0564	.0379	-.0319	-.0237
15	.172	-.2441	1.2420	-.1469	-.0211	-.0168	-.0304	.0464	-.3025	.0503	.0761	.0340	-.0416
16	0.000	.7709	.4693	-.1567	-.0014	-.0201	.0245	-.0327	-.1434	.0740	-.0420	-.0416	-.0118
17	.324	.6617	-.5627	-.0656	-.0324	-.1259	-.0043	.0731	.2135	.0730	-.1271	-.0383	.0883
18	1.156	.4569	-.6004	-.0516	-.0014	.0237	.0362	-.0052	.1375	.0184	-.0111	-.0215	-.0205
19	3.007	.2193	-.5074	-.0345	-.0116	-.0127	.0058	.0096	.1016	.0375	-.0148	-.0074	-.0143
20	4.886	.0580	-.4357	-.0455	-.0056	-.0119	-.0054	-.0046	.0777	.0277	.0039	.0041	.0129
21	7.782	-.1167	-.3472	-.0431	-.0473	-.0183	-.0112	-.0143	.1446	.0479	.0161	-.0165	.0236
22	12.404	-.1783	-.2645	.0256	.0278	.0086	.0565	.0119	.0283	-.0730	-.0254	-.0079	.0271
23	17.679	-.1769	-.2411	-.0404					.0547	-.0296	-.0340		
24	23.652	-.1335	-.1965	-.0151					.0442	-.0485	-.0056		
25	29.638	-.1588	-.1550	.0202					.0728	.0062	.0045		
26	36.633	-.1417	-.1204	-.0078					.0325	-.0503	-.0051		
27	48.631	-.1636	-.1027	.0475					.0499	-.0163	-.0110		
28	60.627	-.1510	-.0735	.0813					.0962	.0380	.0130		
29	72.863	-.0964	-.0428	.0536					.1093	.0150	.0165		
30	75.593	-.0662	-.0161	.0535					.0993	.0153	.0089		
31	96.576	.0289	.0173	.0552					.0860	.0291	.0178		
32	106.386	.0719	-.0484	.0149					.0839	-.0268	-.0194		

125209-38

ORIGINAL PAGE IS OF POOR QUALITY

Table A-8.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 103, MID CLIMB — TEST 273-7 IRIG 7:28:44.5

ALTITUDE= 17187. FT — MACH NUMBER= 0.599 — CORRECTED AIRFLOW= 1622. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	.6780	.1108	.0059	.0149				.0127	.0137			
2	48.789	.5332	.0590	.0236	.0023				-.0047	-.0228			
3	41.907	.3252	.0997	-.0257	-.0022				.0282	.0071			
4	36.019	.0588	.0927	.0003	.0053				.0018	-.0056			
5	30.118	-.2328	.1261	.0025	-.0027				.0198	-.0209			
6	26.166	-.4907	.1085	.0039	-.0075				.0312	.0044			
7	22.196	-.6346	.1030	-.0117	.0350				-.0113	.0169			
8	18.211	-.7180	.1969	-.0174	-.0010				.0090	.0038			
9	15.214	-.7562	.1969	.0173	.0169				.0170	.0015			
10	12.215	-1.2934	.5224	.1125	-.0852				-.1978	.1093			
11	9.009	-1.1600	.5792	.0223	-.0265	.0158	-.0089	-.0299	-.0488	.0033	.0255	-.0510	.0041
12	6.037	-.8481	.5046	.0557	-.0243	-.0129	-.0224	-.0186	-.1231	-.0545	.0378	.0187	-.0301
13	3.629	-.3792	.4556	.1265	-.0311	-.0267	.0093	.0006	-.1931	.0280	.1066	-.0140	-.0410
14	1.413	.5771	.5384	.0537	-.0360	-.0448	.0312	.0041	-.1111	.0018	.0134	-.0021	.0162
15	.172	1.7740	.2684	-.0535	.0416	-.0852	.0613	.0271	-.1053	.0362	.0921	.0298	-.0562
16	0.000	1.6788	-.3672	-.0554	.0182	.0192	.0071	.0095	.0999	.0377	-.0378	-.0578	-.0409
17	.324	.0110	-.8984	-.0712	.0063	-.0324	-.0906	-.0496	.3038	.1377	.0829	.0388	-.0065
18	1.156	-.4162	-.8648	-.1387	.0689	-.0402	-.0218	.0626	.1501	.0704	-.0251	-.1029	.0194
19	3.007	-.5371	-.5566	-.0896	-.0685	-.0274	.0070	.0162	.1893	.0532	.0205	.0216	-.0203
20	4.886	-.6477	-.4848	-.0729	-.0162	-.0534	-.0189	.0275	.2044	.0340	.0303	-.0089	.0082
21	7.782	-.7882	-.3258	-.0854	-.0747	-.0805	-.0202	-.0055	.2589	.0855	.0529	-.0477	-.0095
22	12.404	-.7108	-.2442	.0819	.1083	.0545	.0461	.0702	-.0361	-.1537	-.0409	.0288	.0873
23	17.679	-.5881	-.2692	-.0936					-.0470	-.0798	-.0700		
24	23.652	-.4693	-.1737	-.0908					.0466	-.0876	-.0357		
25	29.638	-.4457	-.1227	-.0449					.0423	.0078	.0229		
26	36.633	-.3996	-.0850	-.0437					.0010	-.0875	-.0119		
27	48.631	-.4001	-.1324	.0148					-.0068	-.0526	-.0070		
28	60.627	-.3611	-.0910	.1095					.1036	.0723	.0298		
29	72.863	-.1889	.0103	.0018					.2061	.0787	.0104		
30	75.593	-.1745	-.0024	.0436					.1001	.0328	.0120		
31	96.576	.0158	.0303	.0482					.0665	.0445	.0106		
32	106.386	.1827	.0859	-.0388					.1799	.0200	.0900		

ORIGINAL PAGE IS OF POOR QUALITY

125209-37

Table A-9.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 104, HIGH-MACH CRUISE TEST 273-7 IRIG 7:49:26.4

ALTITUDE= 35481. FT MACH NUMBER= 0.859 CORRECTED AIRFLOW= 1633. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	1.2549	.0419	.0049	.0114				.0061	.0254			
2	48.789	1.1642	-.0023	.0186	.0110				-.0114	-.0137			
3	41.907	1.0483	.0513	-.0163	-.0047				.0182	.0302			
4	36.019	.8918	.0273	-.0039	-.0042				-.0038	-.0057			
5	30.118	.7167	.0458	.0023	-.0062				.0107	-.0097			
6	26.166	.5626	.0239	.0037	-.0183				-.0052	.0169			
7	22.196	.4900	.0158	.0004	.0053				-.0235	.0096			
8	18.211	.4549	.0523	-.0074	-.0063				-.0114	.0112			
9	15.214	.4287	.0395	.0293	.0039				-.0329	-.0079			
10	12.215	.0382	.3064	.1780	-.1527				-.3341	.2500			
11	9.009	.2773	.1837	.0211	-.0262	.0119	.0017	-.0383	-.0751	.0155	.0129	-.0179	.0243
12	6.037	.4804	.1123	.0249	-.0100	-.0006	-.0144	-.0116	-.1076	-.0187	.0257	.0223	.0196
13	3.629	.8530	.0988	.0376	-.0107	.0318	-.0041	-.0279	-.1014	-.0030	.0159	.0209	.0257
14	1.413	1.4538	.1215	.0224	-.0116	-.0146	.0046	.0002	-.0546	-.0093	.0141	.0140	.0160
15	.172	1.9564	.0396	-.0190	.0409	-.0797	.0590	.0165	-.0316	.0313	.0585	.0092	-.0518
16	0.000	1.4382	-.1428	.0141	.0117	.0211	-.0166	.0015	.0873	.0223	-.0344	-.0481	-.0583
17	.324	-.3311	-.2788	.0267	.0511	.0277	-.0492	-.0537	.2317	.0850	.0886	-.0314	-.1801
18	1.156	-.9313	-.5514	-.0991	.1555	-.1080	-.0617	.1091	.2222	.0609	-.0324	-.1591	.1227
19	3.007	-.8094	-.4139	-.0972	-.0242	-.0545	.0254	.0463	.2622	.0850	-.0455	-.0590	-.0752
20	4.886	-1.0264	-.3695	-.0876	.0092	-.0444	-.0413	-.0307	.1534	.0021	.0169	.0503	.0353
21	7.782	-1.1635	-.2509	-.1111	.0014	-.0907	-.0689	.0001	.2235	.0508	.1334	-.0221	.0061
22	12.404	-1.2955	-.0751	.0725	.1358	.0405	-.0141	.0886	-.0237	-.1513	-.1109	.0556	.0980
23	17.679	-1.3105	-.1838	-.1854					-.0213	-.0582	-.0967		
24	23.652	-1.2673	-.2145	-.3147					.0001	-.1679	-.0881		
25	29.638	-1.0379	-.1499	-.2650					.2674	-.0158	-.0353		
26	36.633	-.6817	-.0123	.0759					.2456	.0626	.0137		
27	48.631	-.4925	-.0247	-.0130					-.1280	-.0901	.0006		
28	60.627	-.4461	-.0324	.1072					.0551	.0699	.0327		
29	72.863	-.2016	.0640	-.0377					.1810	.0890	.0066		
30	75.593	-.1883	.0393	.0269					.0553	.0310	.0156		
31	96.576	.0334	.0490	.0271					.0328	.0412	.0085		
32	106.386	.2275	.1129	-.1250					.1887	-.0485	.1500		

ORIGINAL PAGE IS OF POOR QUALITY

12520 9-44

Table A-10.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 105, LOW-MACH CRUISE TEST 273-7 IRIG 7:56:40.5

ALTITUDE= 35512. FT MACH NUMBER= 0.772 CORRECTED AIRFLOW= 1604. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	.9171	.0449	.0039	.0037				.0046	.0200			
2	48.789	.8477	.0218	.0042	-.0022				-.0001	.0006			
3	41.907	.7400	.0550	-.0111	-.0002				.0072	.0142			
4	36.019	.6045	.0401	.0014	-.0014				-.0098	-.0026			
5	30.118	.4582	.0632	.0027	-.0036				-.0012	-.0079			
6	26.166	.3265	.0611	.0024	-.0154				-.0140	.0095			
7	22.196	.2620	.0726	-.0038	.0102				-.0350	.0127			
8	18.211	.2295	.1205	-.0109	-.0052				-.0219	.0082			
9	15.214	.2010	.1230	.0144	-.0005				-.0279	-.0065			
10	12.215	-.1745	.4389	.1660	-.1618				-.3662	.2785			
11	9.009	.0632	.3366	.0102	-.0131	-.0137	.0077	-.0316	-.0786	-.0062	.0047	-.0157	.0228
12	6.037	.2367	.3029	.0195	-.0094	-.0073	-.0096	-.0043	-.1186	-.0140	.0156	.0136	.0132
13	3.629	.5232	.2954	.0362	-.0208	.0177	-.0158	-.0153	-.1369	.0137	.0250	.0021	.0160
14	1.413	1.0399	.2920	.0233	.0031	-.0148	.0133	.0053	-.0890	.0127	.0038	.0139	.0236
15	.172	1.5024	.0501	-.0284	.0448	-.0643	.0379	.0158	-.0356	.0396	.0494	.0140	-.0397
16	0.000	1.0997	-.3475	-.0058	.0164	.0237	-.0046	.0010	.1311	.0182	-.0255	-.0383	-.0441
17	.324	-.3536	-.7175	-.0192	.0616	.0475	-.1109	-.1144	.3094	.1038	.1578	.0222	-.1247
18	1.156	-.8790	-1.0099	-.1186	.1572	-.0876	-.0250	.0878	.2941	.1185	-.0769	-.1269	.0897
19	3.007	-.8025	-.7697	-.1784	-.0598	-.0141	.0255	.0231	.3111	.0811	.0014	-.0898	-.1181
20	4.886	-.9942	-.8150	-.0477	.0861	-.0501	-.1049	-.0094	.2825	-.0091	-.0249	.0392	.1092
21	7.782	-1.0361	-.6643	-.2448	-.1558	-.1044	-.0465	-.0286	.3231	.1119	.0524	-.0589	-.0293
22	12.404	-.8653	-.3686	.1165	.1926	.0702	.0873	.1195	.1801	-.0132	.0093	.0815	.1545
23	17.679	-.5767	-.1450	-.0564					-.0224	-.1182	-.0755		
24	23.652	-.4315	-.0887	-.0558					.0462	-.0922	-.0531		
25	29.638	-.4207	-.0604	-.0315					.0439	-.0225	-.0020		
26	36.633	-.3731	-.0321	-.0230					.0139	-.0766	.0032		
27	48.631	-.3610	-.0802	.0211					.0104	-.0595	-.0014		
28	60.627	-.2913	-.0479	.0983					.1084	.0542	.0246		
29	72.863	-.1461	.0191	.0054					.1636	.0505	.0053		
30	75.593	-.1149	.0266	.0418					.0954	.0262	.0125		
31	96.576	.0414	.0429	.0412					.0670	.0342	.0112		
32	106.386	.1889	.0771	-.0462					.1702	-.0049	.0881		

ORIGINAL PAGE IS OF POOR QUALITY

12520943

Table A-11.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 106, MAXIMUM MACH NUMBER TEST 273-15 IRIG 12:09:26.5

ALTITUDE= 36978. FT MACH NUMBER= 0.906 CORRECTED AIRFLOW= 1642. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	1.3536	-.0222	-.0267	.0040				-.0014	.0184			
2	48.789	1.2967	-.0421	.0164	-.0159				-.0325	-.0073			
3	41.907	1.1734	.0202	.0105	-.0133				-.0218	.0094			
4	36.019	.9889	-.0014	.0151	-.0123				-.0463	-.0001			
5	30.118	.8559	.0532	.0257	-.0236				.0316	.0257			
6	26.166	.7210	-.0271	.0183	.0040				.0143	-.0255			
7	22.196	.6029	-.0451	-.0082	.0058				-.0420	.0378			
8	18.211	.5968	-.0066	-.0109	-.0181				-.0181	-.0055			
9	15.214	.5684	-.0788	.0049	-.0390				-.0377	.0300			
10	12.215	.2214	.0600	.0190	-.0214				-.2217	.0723			
11	9.009	.4075	.0336	-.0065	-.0202	.0075	-.0514	-.0769	-.0738	.0235	.0074	-.0388	.0029
12	6.037	.5961	-.0555	.0265	.0104	-.0087	.0102	.0232	-.1187	.0184	.0320	.1110	.0276
13	3.629	1.0293	-.1053	.0058	.0874	.0068	-.0002	.0103	-.0530	-.1043	-.0358	.0455	-.0633
14	1.413	1.5834	-.0086	.0446	.0225	-.0103	.0266	.0378	-.0515	.0163	.0091	.0293	.0007
15	.172	2.0827	-.0021	-.0719	-.0281	-.1350	.0419	.0136	-.0307	.0177	.0488	-.0237	-.0582
16	0.000	1.5524	-.0303	.0135	.0278	.0405	.0073	.0151	.0701	-.0035	-.0365	-.0054	-.0738
17	.324	-.2614	-.0511	-.0080	.0602	.0557	-.0115	-.0577	.1494	-.0336	-.0129	-.1106	-.2109
18	1.156	-1.0150	.0153	-.1118	.0349	-.0137	-.0228	.0744	.2776	.0952	-.0299	.0204	.0264
19	3.007	-.7401	.1124	-.0576	-.0251	-.1382	-.0980	-.0431	.3233	.0561	.1089	.0337	-.0069
20	4.886	-.8390	.0771	-.0371	-.0372	-.1605	-.1156	-.0908	.0661	-.1335	-.0686	.0293	.0383
21	7.782	-.8966	.1706	-.0075	-.1383	-.1791	-.1457	-.0658	-.0526	-.1317	-.1098	-.1314	.0256
22	12.404	-1.1893	.0641	.0673	.1533	.0073	-.0677	.0678	-.0271	-.1712	-.1212	.0103	.0540
23	17.679	-1.2841	.0264	-.1227					-.0384	-.0220	-.0840		
24	23.652	-1.2159	-.0176	-.3283					-.0079	-.1344	-.0659		
25	29.638	-1.1378	.1100	-.2093					.0553	.0287	-.0354		
26	36.633	-1.1096	.0931	-.1914					-.0587	-.1967	-.0143		
27	48.631	-1.0564	.1249	-.1625					.0070	-.1227	-.0143		
28	60.627	-1.0654	.0032	.1706					.1501	.1234	.0648		
29	72.863	-.6071	.2264	-.0053					.2271	.1528	-.0582		
30	75.593	-.1555	-.0074	.0330					.0350	.0151	-.0077		
31	96.576	.0828	.0024	.0047					.0053	.0336	.0050		
32	106.386	.4009	-.0270	-.0135					.0261	.0358	.0163		

ORIGINAL PAGE IS OF POOR QUALITY

12520945

Table A-12.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(O) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 107, INFLIGHT RELIGHT TEST 273-7 IRIG 8:12:53.5

ALTITUDE= 27589. FT MACH NUMBER= 0.721 CORRECTED AIRFLOW= 1365. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	1.3631	.0380	.0039	.0019				-.0043	.0329			
2	48.789	1.3162	.0041	.0109	-.0031				-.0105	-.0021			
3	41.907	1.2166	.0372	-.0145	.0028				.0048	.0259			
4	36.019	1.0936	.0329	.0073	-.0088				-.0196	-.0063			
5	30.118	.9645	.0612	-.0064	-.0066				.0103	.0006			
6	26.166	.8619	.0424	.0008	-.0082				-.0030	.0088			
7	22.196	.8063	.0484	.0070	.0124				-.0212	.0241			
8	18.211	.7905	.0789	-.0102	-.0052				-.0006	.0216			
9	15.214	.7794	.0511	-.0012	-.0145				-.0049	.0027			
10	12.215	.6168	.1895	.0189	.0040				-.0936	.0316			
11	9.009	.7151	.2258	.0281	-.0113	-.0200	-.0139	-.0365	-.0613	.0050	-.0293	-.0163	.0480
12	6.037	.8454	.1754	.0206	-.0129	-.0115	-.0323	-.0163	-.0992	-.0109	-.0069	.0179	.0340
13	3.629	1.1843	.2128	.0099	-.0037	.0446	-.0112	-.0334	-.0852	.0138	-.0011	.0169	.0306
14	1.413	1.6347	.1896	.0082	.0090	-.0006	-.0011	.0081	-.0618	-.0133	.0163	.0212	.0389
15	.172	1.8213	-.0618	-.0114	.0705	-.0621	.0814	.0169	-.0172	.0451	.0572	.0215	-.0666
16	0.000	.9195	-.3745	.0070	.0157	.0507	.0086	.0032	.1391	.0277	.0046	-.0533	-.0682
17	.324	-1.3076	-.6804	-.0025	.1101	.1020	-.1815	-.2560	.1476	.0649	.4912	.1974	-.3191
18	1.156	-2.0476	-1.1553	.0681	.1541	-.0102	-.0032	.0655	.5039	-.0752	-.1052	.0312	.0939
19	3.007	-1.7535	-1.1831	-.0848	.1634	.0011	-.0551	-.0108	.3537	.0234	-.1328	.0203	.1141
20	4.886	-1.7517	-1.1938	-.2272	.1131	-.0551	-.1609	-.0345	.3046	.0345	.0202	.1052	.1874
21	7.782	-1.3295	-.4524	-.0766	-.0435	-.0780	-.0838	-.0596	.3268	.1122	.0985	.0291	.0553
22	12.404	-.9079	-.0342	.0809	.0470	-.0320	.0758	.1901	.0602	-.1275	-.1074	-.0878	.0064
23	17.679	-.8128	-.1238	-.0845					-.0547	-.1213	-.0933		
24	23.652	-.6079	-.0864	-.0977					.0446	-.0822	-.0654		
25	29.638	-.5605	-.0503	-.0710					.0413	-.0079	.0026		
26	36.633	-.4758	-.0348	-.0382					.0079	-.0951	-.0152		
27	48.631	-.4535	-.1103	.0026					-.0005	-.0696	-.0127		
28	60.627	-.3824	-.0706	.1090					.1087	.0696	.0299		
29	72.863	-.2378	-.0014	.0405					.1272	.0527	.0254		
30	75.593	-.1724	.0121	.0367					.0950	.0356	.0140		
31	96.576	.0170	.0371	.0350					.0702	.0352	.0125		
32	106.386	.2043	.0687	-.0558					.2037	-.0131	.1128		

ORIGINAL PAGE IS OF POOR QUALITY

12520-96

Table A-13.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 108, MAXIMUM Q TEST 273-15 IRIG 11:39:00

ALTITUDE= 24513. FT MACH NUMBER= 0.836 CORRECTED AIRFLOW= 1617. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	1.8899	-.0321	-.0006	.0023				-.0139	.0240			
2	48.789	1.7625	-.0526	.0163	-.0107				-.0353	-.0006			
3	41.907	1.5806	.0257	.0105	-.0134				.0061	.0248			
4	36.019	1.3198	-.0157	.0296	-.0118				-.0256	.0109			
5	30.118	1.0608	.0282	.0195	-.0139				.0372	.0012			
6	26.166	.8478	-.0859	-.0035	-.0092				.0512	-.0217			
7	22.196	.6978	-.1154	-.0022	-.0006				-.0038	.0369			
8	18.211	.6716	-.0716	-.0269	-.0132				.0456	.0020			
9	15.214	.6181	-.1553	.0290	-.0157				.0188	.0262			
10	12.215	.2119	-.1318	-.0096	-.0492				-.0333	.0494			
11	9.009	.3716	-.1040	.0057	-.0423	-.0089	.0085	-.0703	.0527	.0046	.0008	-.0218	.0121
12	6.037	.6670	-.2269	.0276	-.0396	-.0544	-.0354	-.0230	-.0433	-.0436	-.0026	.0427	.0236
13	3.629	1.3210	-.3184	.0065	.0646	.0212	-.0206	.0192	.0988	-.0532	.0228	.1027	-.0253
14	1.413	2.1955	-.1595	.0216	.0171	-.0542	.0310	-.0001	.0363	-.0188	-.0122	.0005	.0178
15	.172	3.0088	.0276	-.0213	.0440	-.1643	.0979	.0132	-.0901	-.0063	.0694	-.0028	-.0799
16	0.000	2.1532	.1499	.0526	-.0169	.0188	-.0316	.0048	-.0526	.0233	-.0975	-.0622	-.1010
17	.324	-.6420	.2720	-.0005	.0469	-.0342	.0726	-.0677	-.0708	-.0602	.0423	-.0725	-.2500
18	1.156	-1.9168	.7576	.0051	-.0801	-.0802	-.0495	.0725	-.1638	-.0050	-.0562	.0146	-.0984
19	3.007	-1.3882	.7122	-.1679	-.1125	-.1357	-.0211	.0364	-.0017	.1538	.1810	.0910	.0998
20	4.886	-1.6484	.3827	-.1560	-.0565	-.1638	-.1744	-.0989	-.1550	-.0934	-.0683	.1027	.0720
21	7.782	-1.8445	.2838	-.0624	-.1020	-.2404	-.1792	-.0623	-.1063	-.0516	-.1063	-.1297	.0160
22	12.404	-2.1683	.3480	.1604	.2299	-.0167	-.1212	.1516	-.2312	-.2864	-.1721	.0375	.0764
23	17.679	-2.2677	.3113	-.1315					-.2765	-.0835	-.1098		
24	23.652	-2.0116	.3779	-.4290					-.1032	-.1395	-.0678		
25	29.638	-1.5213	.9247	-.2902					.1517	.0487	-.0950		
26	36.633	-.8321	-.0708	-.0487					-.1243	-.1600	-.0105		
27	48.631	-.9501	-.1725	.0283					-.1209	-.1378	-.0484		
28	60.627	-.8591	-.1402	.1940					.0226	.1144	.0434		
29	72.863	-.5909	-.0854	.0192					.0029	-.0009	.0142		
30	75.593	-.4531	-.0244	.0324					-.0025	.0201	.0105		
31	96.576	-.0787	.0197	.0135					-.0350	.0428	.0040		
32	106.386	.4349	.0013	-.0147					-.0042	.0402	.0127		

ORIGINAL PAGE IS OF POOR QUALITY

12520-47

Table A-14.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 109, STALL WARNING (FLAPS UP) TEST 273-7 IRIG 8:18:58

ALTITUDE= 16964. FT MACH NUMBER= 0.391 CORRECTED AIRFLOW= 1591. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	-.2761	.1449	.0074	.0232				.0193	-.0115			
2	48.789	-.3815	.1104	.0125	.0016				.0168	-.0106			
3	41.907	-.5477	.1355	-.0249	.0016				.0350	-.0071			
4	36.019	-.7624	.1355	-.0123	.0143				.0020	-.0032			
5	30.118	-1.0046	.1783	.0013	.0012				.0008	-.0149			
6	26.165	-1.2198	.2097	.0046	-.0053				-.0032	-.0037			
7	22.196	-1.3409	.2406	-.0212	.0372				-.0678	.0357			
8	18.211	-1.4340	.3755	-.0173	-.0003				-.0394	-.0097			
9	15.214	-1.4805	.4481	.0043	.0150				-.0488	-.0131			
10	12.215	-1.9974	.8743	.1425	-.0959				-.2966	.1229			
11	9.009	-2.0706	1.1155	-.0328	.0184	.0056	.0052	.0060	-.2052	.0165	.0418	-.0607	.0080
12	6.037	-1.9270	1.1605	.0385	-.0238	-.0015	-.0105	-.0194	-.2761	-.0229	.0664	-.0139	.0066
13	3.629	-1.7872	1.2985	.2175	-.0497	-.0583	.0012	.0314	-.4748	.0701	.1696	-.0255	-.0806
14	1.413	-1.3482	1.5679	.0311	-.0458	-.0750	.0554	-.0107	-.4238	.0671	.0775	-.0217	-.0062
15	.172	-.2912	1.3415	-.1809	-.0366	.0041	-.0443	.0441	-.3556	.1068	.0745	.0118	-.0190
16	0.000	.3666	.4574	-.2650	-.0140	-.0293	.0326	-.0243	-.1314	.1419	.0240	-.0385	.0081
17	.324	.3310	-.6306	-.1817	-.0457	-.1010	-.0295	.0322	.2544	.1515	-.0586	-.0065	.0748
18	1.156	.2489	-.7101	-.1503	-.0268	.0131	.0129	.0046	.1985	.0586	-.0144	-.0031	-.0073
19	3.007	.1350	-.5792	-.0782	-.0041	-.0030	-.0056	-.0051	.1664	.0280	-.0017	-.0066	-.0015
20	4.886	.0475	-.5064	-.0675	-.0127	-.0130	-.0216	.0014	.1487	.0149	-.0051	.0006	.0131
21	7.782	-.0630	-.4155	-.0524	-.0365	-.0341	-.0187	-.0041	.1731	.0284	.0077	-.0107	.0090
22	12.404	-.1101	-.2738	.0370	.0320	.0187	.0564	.0103	.0513	-.0652	-.0249	.0046	.0355
23	17.679	-.0724	-.2702	-.0162					.0439	-.0710	-.0160		
24	23.652	-.0670	-.2126	-.0014					.0734	-.0380	-.0136		
25	29.638	-.0626	-.1646	.0247					.0694	-.0175	.0127		
26	36.633	-.0539	-.1327	.0263					.0553	-.0436	-.0036		
27	48.631	-.0708	-.1052	.0516					.0627	-.0264	-.0027		
28	60.627	-.0632	-.0616	.0908					.1131	.0123	.0066		
29	72.863	-.0214	-.0144	.0804					.1296	.0136	.0161		
30	75.593	.0011	.0018	.0789					.1128	.0108	.0111		
31	96.576	.0604	.0263	.0869					.1042	.0081	.0149		
32	106.386	.1046	.0396	.0765					.1506	-.0025	.0220		

ORIGINAL PAGE IS
OF POOR QUALITY

12520-48

Table A-15.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 110, STALL WARNING (FLAPS 10) TEST 273-7 IRIG 8:22:26

ALTITUDE= 16239. FT MACH NUMBER= 0.347 CORRECTED AIRFLOW= 1621. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	-.5287	.1811	.0114	.0348				-.0066	-.0187			
2	48.789	-.6518	.1422	-.0039	.0036				-.0170	-.0175			
3	41.907	-.8205	.1413	-.0018	-.0062				-.0024	-.0198			
4	36.019	-1.0727	.1416	-.0010	.0172				-.0299	-.0012			
5	30.118	-1.3226	.2217	.0357	-.0009				-.0068	-.0186			
6	26.166	-1.5477	.2197	.0416	.0027				.0006	-.0162			
7	22.196	-1.6964	.2865	-.0014	.0324				-.0823	.0126			
8	18.211	-1.7902	.4265	-.0009	-.0049				-.0675	-.0009			
9	15.214	-1.8529	.5494	.0422	.0040				-.0802	-.0290			
10	12.215	-2.4470	.9547	.1486	-.0780				-.2710	.0774			
11	9.009	-2.7601	1.6242	-.1442	.0707	.0247	-.1308	.1222	-.3672	.0517	.0036	-.0529	.0079
12	6.037	-2.6707	1.7576	-.0789	-.0798	.0362	-.0661	-.0199	-.5312	.0901	.0365	-.0917	.0814
13	3.629	-2.5904	1.9187	.2102	-.0604	-.0885	.0272	.0385	-.8151	.2208	.1220	-.0551	-.0994
14	1.413	-2.1722	2.1972	.0358	-.0479	-.1212	.0774	-.0090	-.7195	.0888	.1495	-.1003	.0343
15	.172	-1.0175	1.8996	-.2129	-.0786	.0115	-.0579	.0385	-.5851	.1632	.1481	.0089	-.0108
16	0.000	-.1742	1.0006	-.2864	-.0657	-.0532	-.0014	-.0236	-.3785	.1909	.0679	-.0725	-.0016
17	.324	.1934	-.3084	-.2250	-.0702	-.0936	.0062	.0566	.1357	.1730	-.0924	-.0395	.0584
18	1.156	.2617	-.5329	-.1709	-.0440	.0107	.0066	.0110	.1664	.0652	.0019	-.0025	-.0038
19	3.007	.2037	-.5297	-.0960	.0196	-.0084	.0029	.0225	.1665	.0473	-.0252	-.0082	-.0081
20	4.886	.1045	-.4816	-.0398	.0196	-.0158	-.0384	.0163	.1680	.0197	-.0171	.0148	.0193
21	7.782	.0204	-.4155	-.0385	-.0204	-.0031	-.0120	-.0043	.1767	.0238	-.0007	-.0038	.0287
22	12.404	-.0359	-.2977	.0154	.0261	.0065	.0506	-.0030	.0980	-.0703	-.0274	-.0042	.0380
23	17.679	-.0463	-.2735	-.0068					.0671	-.0532	-.0077		
24	23.652	-.0262	-.2530	.0023					.0849	-.0615	-.0072		
25	29.638	-.0273	-.2017	.0124					.0910	-.0268	.0093		
26	36.633	-.0339	-.1592	.0298					.0921	-.0722	-.0130		
27	48.631	-.0457	-.1215	.0554					.1253	-.0514	-.0184		
28	60.627	-.0423	-.0845	.0937					.1410	-.0168	-.0016		
29	72.863	-.0026	-.0493	.0891					.1654	-.0077	.0139		
30	75.593	.0141	-.0247	.0870					.1515	-.0108	.0078		
31	96.576	.0529	-.0035	.0885					.1438	-.0068	.0132		
32	106.386	.0853	.0043	.0976					.1889	-.0193	.0012		

ORIGINAL PAGE IS OF POOR QUALITY

12520-49

Table A-16.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 111, STALL WARNING (FLAPS 30) TEST 273-7 IRIG 8:24:51.9

ALTITUDE= 17049. FT MACH NUMBER= 0.270 CORRECTED AIRFLOW= 1633. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	-.7723	.1489	.0065	.0172				.0104	-.0155			
2	48.789	-.8854	.1294	.0021	.0041				.0167	-.0163			
3	41.907	-1.0550	.1283	-.0229	.0025				.0332	-.0176			
4	36.019	-1.2754	.1268	-.0136	.0220				.0121	.0030			
5	30.118	-1.5261	.1569	.0093	-.0004				.0015	-.0235			
6	26.166	-1.7693	.1576	.0084	-.0011				.0105	-.0106			
7	22.196	-1.9176	.1947	-.0185	.0388				-.0504	.0390			
8	18.211	-2.0237	.3006	-.0118	.0069				-.0305	-.0095			
9	15.214	-2.0874	.3601	.0167	.0242				-.0383	-.0072			
10	12.215	-2.7097	.7711	.2460	-.1419				-.3646	.1958			
11	9.009	-2.9508	1.2136	-.1272	.0586	.0229	-.0494	.0743	-.2676	.0524	.0206	-.0390	-.0170
12	6.037	-2.8361	1.1918	.0207	-.0508	.0019	.0107	-.0492	-.3878	.0281	.0557	-.0651	.0333
13	3.629	-2.9101	1.3854	.2959	-.0906	-.0922	.0162	.0523	-.6970	.2194	.1416	-.0302	-.0987
14	1.413	-2.7349	1.8451	.0510	.0116	-.1108	-.0008	.0393	-.5737	.0610	.0865	-.0417	-.0523
15	.172	-1.7020	1.8956	-.1242	-.0385	.0395	-.1189	.0528	-.5706	.1394	.0194	.0862	-.0611
16	0.000	-.7024	1.2416	-.0694	-.0351	-.0304	.0262	-.0067	-.4445	.0818	.0982	-.0450	.0058
17	.324	.0654	.2537	-.0654	-.0189	-.0528	.0261	.0457	-.0765	.0461	-.0502	-.0605	.0468
18	1.156	.2725	-.0904	-.0529	-.0253	.0073	.0116	-.0035	.0218	.0370	-.0037	.0051	-.0129
19	3.007	.2404	-.2027	-.0441	-.0077	-.0101	-.0061	-.0002	.0571	.0116	.0017	.0005	-.0013
20	4.886	.1794	-.2162	-.0259	.0045	-.0045	.0030	.0063	.0843	.0147	.0049	-.0055	.0045
21	7.782	.1130	-.2035	-.0185	-.0115	-.0097	-.0049	-.0043	.0914	.0033	.0003	.0046	.0060
22	12.404	.0548	-.1410	.0127	.0098	.0035	.0224	-.0077	.0525	-.0258	-.0140	-.0034	.0172
23	17.679	.0547	-.1458	.0089					.0476	-.0438	-.0009		
24	23.652	.0366	-.1261	.0138					.0497	-.0241	-.0073		
25	29.638	.0353	-.1056	.0178					.0483	-.0198	.0013		
26	36.633	.0272	-.0943	.0186					.0473	-.0317	-.0011		
27	48.631	.0099	-.0764	.0346					.0556	-.0302	.0043		
28	60.627	.0082	-.0530	.0458					.0814	-.0104	-.0007		
29	72.863	.0238	-.0311	.0431					.0963	-.0020	.0065		
30	75.593	.0315	-.0185	.0432					.0911	-.0043	.0037		
31	96.576	.0502	-.0112	.0498					.0859	-.0090	.0053		
32	106.386	.0630	.0040	.0581					.1165	-.0092	.0009		

ORIGINAL PAGE IS OF POOR QUALITY

125209-50

Table A-17.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 112, IDLE DESCENT TEST 273-7 IRIG 8:28:56.4

ALTITUDE= 8450. FT MACH NUMBER= 0.439 CORRECTED AIRFLOW= 748. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	1.2639	.0157	-.0056	.0040				-.0018	.0333			
2	48.789	1.2300	-.0008	.0083	.0064				-.0127	.0075			
3	41.907	1.1914	.0344	-.0011	-.0006				-.0042	.0228			
4	36.019	1.1364	.0325	-.0003	-.0040				-.0066	.0030			
5	30.118	1.0884	.0452	-.0028	-.0073				.0068	-.0001			
6	26.166	1.0491	.0584	-.0027	-.0121				-.0223	.0184			
7	22.196	1.0409	.0793	.0075	.0013				-.0164	.0022			
8	18.211	1.0443	.0982	-.0020	.0013				-.0205	.0148			
9	15.214	1.0332	.1152	.0205	.0029				-.0583	-.0375			
10	12.215	.9902	.2084	-.0098	.0222				-.0374	.0114			
11	9.009	1.0727	.2381	.0117	-.0105	-.0022	-.0141	-.0435	-.0618	.0112	.0062	.0070	.0192
12	6.037	1.1272	.2314	.0060	-.0151	.0046	-.0157	-.0055	-.0663	.0165	.0044	.0045	.0342
13	3.629	1.2796	.2060	-.0570	-.0197	.0483	-.0082	-.0285	-.0483	.0218	-.0253	-.0069	.0397
14	1.413	1.3977	.0371	-.0280	.0396	.0179	-.0089	-.0027	-.0377	-.0010	-.0011	.0327	.0549
15	.172	.8220	-.6155	-.0603	.0873	-.0680	.0408	.0100	.1446	.0582	.0084	-.0435	-.0833
16	0.000	-.7917	-1.4563	-.0402	.0959	.1351	.0472	.0324	.4827	.0693	-.0261	-.1008	-.1185
17	.324	-2.7683	-2.1818	-.3996	.4196	.5883	-.4559	-.6023	.5912	.5202	.9275	.0958	-.6130
18	1.156	-2.2738	-1.8405	-.2842	.2987	-.0044	.0093	.1758	.3893	.1673	-.0765	-.3055	.0716
19	3.007	-1.4961	-1.0829	-.2399	-.1418	-.0796	.0047	.0159	.3908	.0912	.1020	.0822	.0115
20	4.886	-1.2309	-.7692	-.0790	-.0327	-.1168	-.0335	.0242	.3598	.0495	.0031	.0048	.0536
21	7.782	-.9726	-.4377	-.0430	-.0316	-.0664	-.0135	.0118	.2926	.0420	.0243	-.0441	-.0052
22	12.404	-.8101	-.3539	.0914	.1350	.0401	.0524	.1064	.0405	-.1545	-.0752	.0059	.1011
23	17.679	-.6234	-.3465	-.0879					.0300	-.0801	-.0554		
24	23.652	-.4811	-.2932	-.1119					.0814	-.0802	-.0295		
25	29.638	-.4124	-.2017	-.0459					.0683	-.0027	.0172		
26	36.633	-.3266	-.1404	-.0281					.0447	-.0645	-.0049		
27	48.631	-.2903	-.1410	.0170					.0381	-.0296	-.0048		
28	60.627	-.2335	-.0617	.1045					.1097	.0380	.0168		
29	72.863	-.1294	-.0047	.0323					.1654	.0364	.0054		
30	75.593	-.0965	.0049	.0540					.1102	.0197	.0103		
31	96.576	.0250	.0264	.0528					.0891	.0286	.0161		
32	106.386	.1516	.0701	-.0098					.1761	.0181	.0711		

12520-51

Table A-18.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 113, APPROACH TEST 273-7 IRIG 8:34:27

ALTITUDE= 6003. FT MACH NUMBER= 0.265 CORRECTED AIRFLOW= 1547. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	-.9824	.1956	-.0005	.0377				.0323	.0079			
2	48.789	-1.1374	.1467	.0344	-.0106				.0126	-.0205			
3	41.907	-1.3859	.1597	.0027	-.0044				.0085	-.0340			
4	36.019	-1.6508	.1058	-.0010	.0209				-.0416	.0014			
5	30.118	-1.9705	.1965	-.0103	.0259				-.0039	-.0072			
6	26.166	-2.2215	.1914	-.0107	.0505				-.0026	-.0379			
7	22.196	-2.4542	.2377	-.0560	.0693				-.0677	.0342			
8	18.211	-2.5446	.3324	-.0655	.0428				-.0254	-.0005			
9	15.214	-2.6340	.4313	.0031	.0474				-.0440	-.0094			
10	12.215	-3.3275	.6888	.1528	-.0893				-.2860	.1107			
11	9.009	-3.5093	.9368	.0280	.0208	.0073	.0160	.0682	-.2242	.0286	.0178	-.0742	.0011
12	6.037	-3.3979	.9730	.0574	-.0241	-.0245	-.0246	-.0286	-.3091	-.0446	.0490	.0332	-.0329
13	3.629	-3.4562	1.1390	.3777	-.0304	-.1445	.0001	.0676	-.6262	.0849	.2201	-.0430	-.1309
14	1.413	-3.1806	1.6028	.1886	-.0419	-.1369	.0700	.0425	-.5739	.0398	.0322	-.0520	-.0377
15	.172	-1.8572	1.8313	-.0685	-.0721	.0420	-.0875	.0377	-.5706	.0898	.0792	.0221	-.0109
16	0.000	-.5835	1.2262	-.0967	-.0242	-.0557	.0680	-.0406	-.4446	.0886	.0639	-.0541	.0458
17	.324	.2907	.1463	-.0412	-.0102	-.0564	.0496	.0680	-.0287	.0238	-.1331	-.0717	.0519
18	1.156	.4482	-.1466	-.0549	-.0209	.0128	.0175	-.0043	.0704	.0226	.0120	-.0083	-.0055
19	3.007	.3148	-.2369	-.0628	.0133	.0047	-.0160	-.0129	.0733	.0240	-.0106	-.0163	-.0030
20	4.886	.2158	-.2660	-.0366	.0199	-.0109	-.0179	.0122	.0934	.0177	.0119	-.0099	.0052
21	7.782	.1031	-.2219	-.0178	-.0018	-.0010	.0027	-.0089	.1182	.0255	.0090	-.0032	.0330
22	12.404	.0307	-.1557	-.0003	-.0094	-.0168	.0253	-.0137	.0791	-.0214	-.0081	-.0125	.0219
23	17.679	.0104	-.1195	.0002					.0337	-.0242	-.0010		
24	23.652	.0102	-.1318	-.0124					.0608	-.0309	.0060		
25	29.638	-.0077	-.1142	.0066					.0538	-.0103	.0047		
26	36.633	-.0156	-.0937	-.0005					.0584	-.0373	-.0018		
27	48.531	-.0326	-.0628	.0205					.0848	-.0234	-.0107		
28	60.627	-.0421	-.0582	.0439					.0794	.0018	.0006		
29	72.863	-.0145	-.0387	.0376					.0996	.0077	.0125		
30	75.593	-.0033	-.0176	.0346					.0881	.0050	.0064		
31	96.576	.0385	.0027	.0389					.0843	.0135	.0120		
32	106.386	.0624	.0138	.0430					.1090	.0068	.0094		

ORIGINAL PAGE IS OF POOR QUALITY

125209-52

Table A-19.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 114, TOUCH AND GO TEST 273-7 IRIG 8:40:38.1

ALTITUDE= 2561. FT MACH NUMBER= 0.263 CORRECTED AIRFLOW= 1585. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	-1.2423	.2260	.0114	.0279				-.0107	-.0333			
2	48.789	-1.3951	.2037	-.0097	-.0208				.0329	.0119			
3	41.907	-1.6942	.1932	-.0328	.0024				.0238	-.0334			
4	36.019	-2.0402	.1906	-.0274	.0245				-.0299	-.0086			
5	30.118	-2.4476	.2415	.0093	.0021				-.0347	-.0278			
6	26.166	-2.8186	.2262	-.0131	.0013				-.0269	-.0100			
7	22.196	-3.0504	.2456	-.0416	.0496				-.1412	.0414			
8	18.211	-3.2089	.3867	-.0489	.0161				-.1026	-.0100			
9	15.214	-3.3275	.4329	-.0018	.0256				-.1242	.0195			
10	12.215	-4.0792	.8133	.1193	-.0816				-.3961	-.0184			
11	9.009	-4.4561	1.1894	.0149	-.0103	.0370	-.0282	.1130	-.4808	.0443	.0231	-.0699	-.0425
12	6.037	-4.2609	1.1553	.1054	-.0295	-.0373	-.0288	-.0330	-.5649	-.0569	.0720	.0141	-.0555
13	3.629	-4.4133	1.3605	.5531	-.1202	-.1714	.0267	.0755	-1.0506	.1412	.3128	-.0671	-.1415
14	1.413	-4.1699	1.9831	.2495	-.1083	-.0967	.0295	.0620	-1.1096	.2242	.0029	.0065	-.0853
15	.172	-2.5406	2.2309	.0067	-.0629	.0624	-.1107	.0302	-1.0498	.1358	.0854	.0379	.0034
16	0.000	-1.0088	1.5795	-.0577	-.0346	-.0638	.0689	-.0379	-.8200	.1877	.0942	-.0595	.0450
17	.324	.2451	.2778	-.0091	-.0017	-.0821	.0507	.0775	-.1448	.0740	-.0968	-.0701	.0680
18	1.156	.4916	-.1038	-.0455	-.0347	.0162	.0096	-.0054	.0675	.0471	.0065	.0118	-.0243
19	3.007	.4029	-.2489	-.0520	-.0068	-.0077	-.0012	-.0018	.1200	.0177	-.0027	.0042	.0106
20	4.886	.2880	-.2647	-.0342	-.0017	.0031	-.0072	.0072	.1511	.0174	-.0073	.0011	.0087
21	7.782	.1662	-.2471	-.0338	-.0168	-.0060	-.0052	-.0025	.1581	-.0018	-.0023	.0001	.0094
22	12.404	.0812	-.1616	-.0005	-.0026	.0063	.0304	-.0140	.1069	-.0224	-.0074	-.0052	.0216
23	17.679	.0687	-.1745	-.0089					.0830	-.0557	-.0044		
24	23.652	.0498	-.1405	-.0013					.0842	-.0312	-.0053		
25	29.638	.0385	-.1277	.0085					.0906	-.0263	.0056		
26	36.633	.0293	-.1120	-.0004					.0842	-.0394	.0012		
27	48.631	.0024	-.0984	.0264					.0870	-.0333	.0077		
28	60.627	-.0014	-.0726	.0377					.1203	-.0047	.0050		
29	72.863	-.0031	-.0676	.0552					.0853	-.0163	.0160		
30	75.593	.0366	-.0248	.0326					.1264	-.0006	.0088		
31	96.576	.0766	-.0026	.0407					.1192	-.0005	.0155		
32	106.386	.0970	.0149	.0467					.1501	-.0070	.0075		

ORIGINAL PAGE IS OF POOR QUALITY

12520953

Table A-20.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 115, THRUST REVERSE TEST 273-7 IRIG 8:45:59.4

ALTITUDE= 2561. FT MACH NUMBER= 0.179 CORRECTED AIRFLOW= 1369. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	-.8887	.1066	-.0022	.0199				.0314	-.0311			
2	48.789	-.9857	.0774	.0006	-.0071				.0352	.0045			
3	41.907	-1.1633	.0827	-.0252	-.0001				.0384	-.0216			
4	36.019	-1.3741	.0761	-.0208	.0229				.0107	.0032			
5	30.118	-1.6220	.0934	.0008	-.0007				.0190	-.0087			
6	26.166	-1.8395	.0529	.0016	-.0046				.0258	.0013			
7	22.196	-1.9782	.0370	-.0258	.0338				-.0299	.0252			
8	18.211	-2.0915	.0925	-.0263	.0043				.0127	-.0126			
9	15.214	-2.1436	.0820	.0046	.0089				.0301	.0110			
10	12.215	-2.6567	.2559	.1200	-.0946				-.1692	.1059			
11	9.009	-2.8212	.2523	.0170	.0129	.0199	.0133	.0655	-.0603	.0081	.0323	-.0492	-.0359
12	6.037	-2.8874	.2061	.0406	-.0109	-.0187	-.0063	-.0124	-.0956	-.0364	.0294	.0015	-.0534
13	3.629	-3.1425	.1620	.2891	-.0141	-.1186	.0041	.0694	-.2526	.0400	.1674	-.0072	-.1075
14	1.413	-3.3882	.2734	.1837	-.0277	-.1017	.0409	.0277	-.1944	.0332	.0193	-.0476	-.0226
15	.172	-2.9034	.7084	.0515	-.0238	.0634	-.1167	-.0025	-.2458	-.0327	.0021	.0417	-.0094
16	0.000	-1.9518	.5912	.0260	.0306	-.0032	.0365	-.0097	-.2276	.0424	.1073	.0083	.0185
17	.324	-.3537	.2393	-.0432	.0268	.0278	-.0432	-.0225	-.1267	.0045	.1243	.0322	-.0461
18	1.156	.1747	.0377	-.0082	.0468	-.0226	-.0179	.0279	-.0755	.0403	-.0086	-.0236	.0444
19	3.007	.2859	.0049	-.0047	.0139	-.0079	.0161	.0032	-.0141	.0040	-.0079	-.0070	.0027
20	4.886	.2717	-.0087	-.0343	.0004	-.0165	-.0130	-.0053	-.0123	.0132	-.0083	-.0003	-.0004
21	7.782	.2497	-.0163	-.0184	-.0062	-.0119	-.0070	-.0043	.0022	.0047	-.0092	-.0029	.0070
22	12.404	.2022	-.0070	-.0055	-.0120	.0015	.0038	-.0238	.0092	.0065	-.0030	-.0079	.0020
23	17.679	.1994	-.0038	-.0059					-.0057	-.0022	-.0107		
24	23.652	.1872	.0251	-.0200					-.0105	.0275	-.0179		
25	29.638	.1845	.0306	-.0235					-.0202	.0383	-.0206		
26	36.633	.1844	.0222	-.0265					-.0132	.0369	-.0156		
27	48.631	.1887	.0527	-.0276					-.0193	.0348	-.0237		
28	60.627	.2180	.0465	-.0269					-.0120	.0262	-.0160		
29	72.863	.2228	.0393	-.0226					-.0134	.0159	-.0118		
30	75.593	.2371	.0364	-.0137					-.0058	.0214	-.0180		
31	96.576	.2359	.0204	-.0049					-.0038	.0050	-.0076		
32	106.386	.1980	.0521	-.0227					.0352	-.0529	.0339		

ORIGINAL PAGE IS OF POOR QUALITY

12529-54

Table A-21.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 116, 2.0g LEFT TURN (FLAPS UP)   TEST 273-10   IRIG 13:33:6

ALTITUDE= 8397. FT   MACH NUMBER= 0.487   CORRECTED AIRFLOW= 1562. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	.2640	.1281	-.0134	.0535				-.0577	-.0171			
2	48.789	.1083	.1316	.0054	.0139				-.0881	.0237			
3	41.907	-.1314	.1703	-.0038	.0334				.0009	-.0079			
4	36.019	-.4616	.2072	.0665	.0308				-.0616	.0432			
5	30.118	-.7974	.2692	.0463	.0046				-.0240	-.0289			
6	26.166	-1.0615	.1772	.0530	-.0315				-.0861	-.0051			
7	22.196	-1.2836	.2457	-.0064	.0344				-.1466	.0005			
8	18.211	-1.3373	.4288	.0104	.0035				-.1260	.0081			
9	15.214	-1.4437	.4468	-.0108	.0011				-.1697	.0187			
10	12.215	-1.8907	.8090	-.0481	.0237				-.2491	-.0991			
11	9.009	-2.1006	1.1932	.0574	-.0505	-.0078	-.0172	.0183	-.4310	.0730	.0094	-.0347	.0137
12	6.037	-1.7958	1.1411	.0290	-.0436	.0105	-.0533	-.0380	-.6473	.0164	.0960	.0155	-.0479
13	3.629	-1.4055	1.2481	.2394	-.0573	-.0825	.0005	.0245	-.8742	.1055	.1507	-.0089	-.1072
14	1.413	-.4567	1.4096	.0424	-.0217	-.1266	.0790	.0091	-.7652	.1282	.0543	-.0026	.0064
15	.172	1.0349	.8838	-.1150	.0223	-.0564	.0014	.0208	-.4907	.2557	.0790	.0144	-.0399
16	0.000	1.3851	-.3968	-.2134	-.0146	.0044	.0223	-.0075	.1711	.2858	-.0536	-.0281	-.0040
17	.324	.2314	-1.7001	-.3180	-.0405	.0519	-.0033	.0109	.7529	.2275	.0250	-.0655	-.0831
18	1.156	-.1510	-1.4350	-.1490	-.0252	.0154	.0117	-.0190	.6857	.1001	-.0286	-.0075	-.0240
19	3.007	-.2599	-1.0382	-.1289	-.0680	-.0148	.0288	.0253	.5103	.0988	.0043	.0393	-.0290
20	4.886	-.4280	-.8477	-.0774	-.0224	-.0718	-.0269	.0273	.4922	.0909	-.0299	.0075	.0311
21	7.782	-.5624	-.6215	-.1040	-.0824	-.0788	-.0345	-.0145	.4556	.0787	.0166	-.0508	.0328
22	12.404	-.5198	-.4570	.0600	.0779	.0358	.1039	.0609	.1916	-.1449	-.0774	-.0086	.0832
23	17.679	-.4640	-.4653	-.0906					.1727	-.0515	-.0647		
24	23.652	-.3679	-.3442	-.0659					.1569	-.0869	-.0147		
25	29.638	-.3657	-.2766	-.0067					.1864	-.0190	.0109		
26	36.633	-.3076	-.1908	-.0317					.1101	-.1000	-.0153		
27	48.631	-.3231	-.1918	.0518					.1152	-.0489	-.0162		
28	60.627	-.2846	-.1157	.1245					.2140	.0527	.0357		
29	72.863	-.1849	-.0673	.0785					.2142	.0154	.0270		
30	75.593	-.1306	-.0104	.0754					.2067	.0324	.0369		
31	96.576	.0415	.0402	.0795					.1766	.0339	.0360		
32	106.386	.1402	-.0935	-.0118					.1704	-.0724	-.0300		

125209-55

Table A-22.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 117, 1.5g LEFT TURN (FLAPS 30) TEST 273-10 IRIG 13:41:7.5

ALTITUDE= 8131. FT MACH NUMBER= 0.251 CORRECTED AIRFLOW= 1539. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	-.9499	.2009	-.0069	.0167				-.0914	-.0072			
2	48.789	-1.0971	.1845	.0061	-.0082				-.0767	-.0112			
3	41.907	-1.2762	.1802	-.0019	.0187				-.0353	-.0058			
4	36.019	-1.5752	.1938	.0270	.0161				-.0802	-.0098			
5	30.118	-1.8452	.2620	.0242	.0232				-.0557	-.0073			
6	26.166	-2.1227	.2305	.0095	-.0023				-.1029	-.0226			
7	22.196	-2.2870	.2815	-.0295	.0540				-.2186	.0540			
8	18.211	-2.3877	.4417	-.0353	.0101				-.2351	-.0313			
9	15.214	-2.4740	.4980	-.0139	.0266				-.2357	-.0004			
10	12.215	-3.0055	.8407	-.0044	.0332				-.3800	-.1120			
11	9.009	-3.3737	1.3271	.0286	-.0589	.0139	-.0876	.0751	-.7391	.0709	.0517	-.0150	-.0724
12	6.037	-3.2616	1.2591	.0868	-.0066	-.0390	-.0319	-.0118	-.8404	-.0467	.0908	-.0083	-.0469
13	3.629	-3.5811	1.7594	.5596	-.2120	-.1460	-.0575	.1209	-1.6501	.2929	.3379	-.0424	-.2434
14	1.413	-3.5744	2.4727	.2308	-.0107	-.2344	.1569	.0073	-1.8790	.4276	.1355	-.0209	-.0992
15	.172	-2.3305	2.5667	-.1501	-.0112	.0807	-.1509	.0823	-1.6187	.4095	.0242	.0848	-.0700
16	0.000	-1.0628	1.6854	-.0412	-.0776	-.0346	.0561	-.0507	-1.1847	.3868	.1195	-.0755	.0428
17	.324	-.0522	.2474	-.0615	-.0162	-.1126	-.0211	.0571	-.2192	.2568	.0439	-.0049	.0406
18	1.156	.2109	-.1608	-.0172	-.0146	.0212	.0027	.0034	.0493	.1584	.0174	.0115	-.0170
19	3.007	.2008	-.3160	-.0277	-.0009	-.0064	-.0210	.0245	.1419	.0751	-.0071	.0007	-.0082
20	4.886	.1311	-.3171	-.0115	-.0059	-.0020	-.0305	.0128	.1516	.0147	-.0304	-.0082	.0216
21	7.782	.0572	-.2791	-.0068	-.0073	.0068	-.0089	-.0086	.1791	-.0029	-.0152	.0005	.0353
22	12.404	-.0267	-.2338	-.0026	.0085	-.0145	.0322	-.0007	.1381	-.0554	-.0089	-.0168	.0193
23	17.679	-.0521	-.2084	-.0074					.1592	-.0419	-.0100		
24	23.652	-.0564	-.1943	-.0009					.1074	-.0752	.0017		
25	29.638	-.0690	-.1714	.0277					.1291	-.0492	-.0039		
26	36.633	-.0740	-.1378	-.0013					.1002	-.0937	-.0049		
27	48.631	-.0984	-.1096	.0386					.1139	-.0810	-.0115		
28	60.627	-.0929	-.0834	.0425					.1354	-.0534	-.0001		
29	72.863	-.0544	-.0701	.0432					.1472	-.0359	.0099		
30	75.593	-.0604	-.0253	.0410					.1490	-.0422	.0122		
31	96.576	-.0267	-.0061	.0412					.1473	-.0349	.0182		
32	106.386	-.0381	-.0232	.0245					.1729	-.0872	-.0109		

125209-56

Table A-23.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 120, 2.0g RIGHT TURN (FLAPS UP) TEST 273-15 IRIG 11:04:04

ALTITUDE= 8218. FT MACH NUMBER= 0.475 CORRECTED AIRFLOW= 1195. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	1.0189	.0574	-.0143	-.0081				-.0477	.0207			
2	48.789	.9301	.0580	.0067	-.0269				-.0531	.0246			
3	41.907	.8245	.0814	.0201	-.0157				-.0630	.0154			
4	36.019	.6528	.0963	.0222	-.0118				-.0736	.0208			
5	30.118	.4968	.1745	.0278	-.0024				-.0204	.0082			
6	26.166	.3763	.1842	.0064	-.0082				-.0338	-.0170			
7	22.196	.2945	.2578	.0171	-.0146				-.0884	.0500			
8	18.211	.2881	.3548	-.0261	-.0145				-.0625	-.0059			
9	15.214	.2679	.3611	.0014	-.0184				-.1074	.0863			
10	12.215	-.0287	.6807	.0408	-.0545				-.1974	.1564			
11	9.009	.0418	.8385	.0075	-.0311	-.0182	-.0352	-.0288	-.1126	.0356	.0158	-.0154	.0430
12	6.037	.1711	.8819	-.0416	-.0589	-.0270	-.0437	.0223	-.1897	.0467	.0535	.0282	.0797
13	3.629	.4775	.9297	-.0015	.0356	-.0248	-.0205	.0332	-.1640	-.0297	.0025	.0629	-.0305
14	1.413	.8816	.9405	-.0767	.0064	-.0405	.0452	-.0175	-.2413	.0808	-.0181	-.0012	.0882
15	.172	1.2911	-.0151	-.2531	.0187	-.0512	.0486	.0406	-.1355	.0813	-.0054	-.0794	-.0632
16	0.000	.5610	-1.6444	-.3972	.0519	.0768	.0871	.0392	.3489	.1662	-.1253	-.1148	-.0870
17	.324	-1.5881	-3.7798	-1.1996	-.2200	.2124	.1101	-.0218	.4010	.1192	.0988	-.1468	-.2990
18	1.156	-1.4182	-2.6185	-.5823	-.3176	-.1735	-.1039	-.0582	.5108	.1713	.0244	.0285	.0805
19	3.007	-.8137	-1.4123	-.1617	-.0560	-.0914	-.0878	-.0101	.3625	.1654	.0833	.1309	.0499
20	4.886	-.7198	-.9921	-.0263	-.0917	-.1783	-.1380	.0052	.2454	-.0146	-.1647	-.0354	.0626
21	7.782	-.6209	-.5972	-.0242	-.1662	-.1967	-.1388	-.0383	.1673	-.1265	-.1772	-.1339	.0141
22	12.404	-.6654	-.5878	.1051	.1304	.0438	.0822	.0563	.0307	-.2138	-.1435	-.0090	.0747
23	17.679	-.5316	-.5479	-.0417					.0357	-.1006	-.0925		
24	23.652	-.4077	-.4497	-.0942					.0824	-.1009	-.0608		
25	29.638	-.3594	-.3111	.0311					.1293	-.0167	.0023		
26	36.633	-.2991	-.2474	-.0048					.0661	-.0913	-.0193		
27	48.631	-.2888	-.2101	.0749					.0867	-.0547	-.0260		
28	60.627	-.2321	-.1065	.1645					.1796	.0523	.0126		
29	72.863	-.1266	-.0513	.1193					.2041	.0082	.0180		
30	75.593	-.0682	.0030	.1279					.1780	.0238	.0107		
31	96.576	.0873	.0415	.1211					.1642	.0335	.0260		
32	106.386	.2636	.0374	.1078					.2229	.0556	.0223		

125209-57

Table A-24.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 121, 1.5g RIGHT TURN (FLAPS 30) TEST 273-15 IRIG 11:07:27.4

ALTITUDE= 8221. FT MACH NUMBER= 0.265 CORRECTED AIRFLOW= 1434. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	-.6732	.1498	-.0138	-.0183				-.0052	-.0467			
2	48.789	-.7798	.1657	-.0122	-.0023				.0027	.0287			
3	41.907	-.9172	.1715	-.0252	-.0093				.0197	-.0298			
4	36.019	-1.1640	.1943	.0112	.0067				-.0228	.0290			
5	30.118	-1.3924	.2638	.0303	.0076				-.0075	-.0058			
6	26.166	-1.6032	.2932	-.0160	.0173				.0265	-.0227			
7	22.196	-1.7629	.3668	-.0093	.0219				-.0460	.0545			
8	18.211	-1.8378	.5273	-.0407	-.0031				-.0088	.0057			
9	15.214	-1.8909	.6131	-.0243	.0036				-.0028	.0705			
10	12.215	-2.4661	1.0935	.1386	-.1293				-.2706	.2101			
11	9.009	-2.5918	1.4074	-.0293	.0033	.0374	-.0622	.0361	-.1016	.0388	.0606	-.0556	-.0001
12	6.037	-2.5741	1.5408	.0463	-.0525	-.0216	-.0370	-.0111	-.1550	.0030	.0346	.0347	-.0012
13	3.629	-2.6406	1.8284	.2496	.0088	-.1157	-.0440	.0973	-.2868	.0002	.1899	.0714	-.1905
14	1.413	-2.7513	2.7746	-.0998	.0750	-.2075	.1373	-.0770	-.3283	.0994	-.0079	.0005	-.0431
15	.172	-1.8514	2.7858	-.3798	-.1449	.0565	-.1185	.0618	-.3696	.0837	.0444	.0331	-.0387
16	0.000	-.8687	1.7891	-.4421	-.1134	-.0101	.0419	-.0204	-.2554	.0897	.0377	-.0656	-.0056
17	.324	-.0575	.1373	-.3615	-.0979	-.0999	-.0236	.0318	-.0385	.0694	-.0100	-.0394	.0486
18	1.156	.1743	-.3116	-.1799	-.0664	.0055	.0283	-.0032	.0037	.0681	.0092	-.0237	.0205
19	3.007	.2564	-.3128	-.0391	.0195	-.0766	-.1310	-.0366	.0644	.0972	.0925	.0949	.0587
20	4.886	.2585	-.2696	-.0120	-.0865	-.1233	-.1293	-.0438	-.0736	-.0848	-.0862	-.0204	.0171
21	7.782	.2090	-.1840	.0207	-.1320	-.1567	-.1322	-.0603	-.1074	-.2077	-.1956	-.0934	.0151
22	12.404	.0016	-.2832	.0374	.0420	-.0035	.0304	-.0189	.0190	-.0633	-.0455	-.0359	-.0042
23	17.679	-.0482	-.2636	.0404					.0345	-.0193	-.0022		
24	23.652	-.0133	-.2406	.0396					.0429	-.0321	-.0050		
25	29.638	-.0305	-.2103	.0755					.0793	.0108	-.0035		
26	36.633	-.0337	-.1704	.0662					.0650	-.0370	-.0118		
27	48.631	-.0501	-.1357	.0918					.0930	-.0352	-.0176		
28	60.627	-.0445	-.1002	.1110					.1196	-.0030	-.0065		
29	72.863	-.0192	-.0789	.0964					.1432	-.0200	.0047		
30	75.593	-.0090	-.0598	.1103					.1346	-.0020	-.0075		
31	96.576	.0195	-.0460	.1037					.1331	-.0095	-.0020		
32	106.386	.0270	-.0411	.1157					.1931	.0010	-.0059		

9/1

ORIGINAL PAGE IS OF POOR QUALITY

12520-9-58

Table A-25.

FOURIER - BESSEL COEFFICIENTS FOR ENGINE NUMBER THREE PRESSURES

P(THETA)=A(0) + SIGMA(A(N)COS(NTHETA) + B(N)SIN(NTHETA))

CONDITION 123, AIRPLANE STALL TEST 273-10 IRIG 13:26:16.8

ALTITUDE= 9000. FT MACH NUMBER= 0.207 CORRECTED AIRFLOW= 1551. LB/SEC

ROW NO.	Z (IN)	A(0) (PSI)	A(1) (PSI)	A(2) (PSI)	A(3) (PSI)	A(4) (PSI)	A(5) (PSI)	A(6) (PSI)	B(1) (PSI)	B(2) (PSI)	B(3) (PSI)	B(4) (PSI)	B(5) (PSI)
1	54.051	-1.1607	.2974	-.0420	.0230				-.0452	-.0130			
2	48.789	-1.2851	.2406	-.0307	.0046				-.0507	-.0168			
3	41.907	-1.4541	.2422	-.0234	.0035				-.0205	-.0417			
4	36.019	-1.7063	.2241	-.0220	.0239				-.0459	.0050			
5	30.118	-1.9749	.3137	.0244	.0158				-.0303	-.0130			
6	26.166	-2.2512	.2665	.0079	-.0059				-.0192	-.0139			
7	22.196	-2.4336	.3446	.0141	.0119				-.0996	.0686			
8	18.211	-2.5427	.5000	-.0067	.0085				-.0623	-.0226			
9	15.214	-2.6339	.5854	.0341	-.0201				-.0378	.0681			
10	12.215	-3.1906	.9593	.1327	-.0541				-.1575	-.0330			
11	9.009	-3.5562	1.4117	.1436	-.0893	.0605	-.1062	.1130	-.2487	-.0483	.1296	-.0693	-.0169
12	6.037	-3.6103	1.7308	.0173	.0802	-.0565	-.0455	.0066	-.4056	.0765	-.1304	.2473	-.1731
13	3.629	-4.4217	2.9746	.0351	-.0340	-.2304	.0176	.0660	-1.0458	.4339	.1482	-.0868	-.1083
14	1.413	-4.5505	3.6060	.1008	-.1247	-.1533	.0435	.0110	-.9761	.2162	.2239	-.1410	.0331
15	.172	-3.4679	3.7221	-.1600	-.1958	.1032	-.1498	.0725	-.8680	.1864	.1339	-.0684	.0092
16	0.000	-2.0984	2.6943	-.1430	-.1516	-.0877	.1195	-.0613	-.6834	.1163	.1384	-.0723	-.0031
17	.324	-.5955	1.0157	-.2368	-.0647	-.0402	.0123	.0228	-.3337	.0588	.1155	-.0409	-.0323
18	1.156	-.0488	.1940	-.0660	-.0655	-.0052	.0205	.0045	-.0615	.0269	.0257	.0064	-.0189
19	3.007	.1212	-.1471	-.0427	-.0279	-.0143	.0127	.0063	-.0573	.0359	-.0303	-.0018	-.0082
20	4.886	.1013	-.2110	-.0079	.0173	.0110	.0247	-.0074	-.0169	.0076	-.0474	-.0095	.0281
21	7.782	.0936	-.2154	.0072	-.0008	.0155	.0002	-.0033	.0244	.0119	-.0241	.0034	.0246
22	12.404	.0177	-.1910	.0367	.0256	-.0076	.0305	-.0001	.0183	-.0532	-.0299	-.0069	-.0023
23	17.679	-.0027	-.1839	.0281					.0583	-.0160	-.0230		
24	23.652	.0021	-.1743	.0518					.0291	-.0367	-.0000		
25	29.638	-.0097	-.1536	.0866					.0551	-.0183	-.0156		
26	36.633	-.0230	-.1245	.0826					.0528	-.0575	-.0079		
27	48.631	-.0489	-.1088	.1024					.0825	-.0662	-.0241		
28	60.627	-.0416	-.0903	.1058					.1003	-.0402	-.0161		
29	72.863	-.0311	-.0797	.0969					.1130	-.0511	-.0037		
30	75.593	-.0312	-.0690	.1009					.1109	-.0451	-.0140		
31	96.576	-.0238	-.0578	.0929					.1179	-.0456	-.0063		
32	106.386	-.0262	-.0250	.1190					.1673	-.0641	-.0265		

ORIGINAL PAGE IS OF POOR QUALITY

125209-59

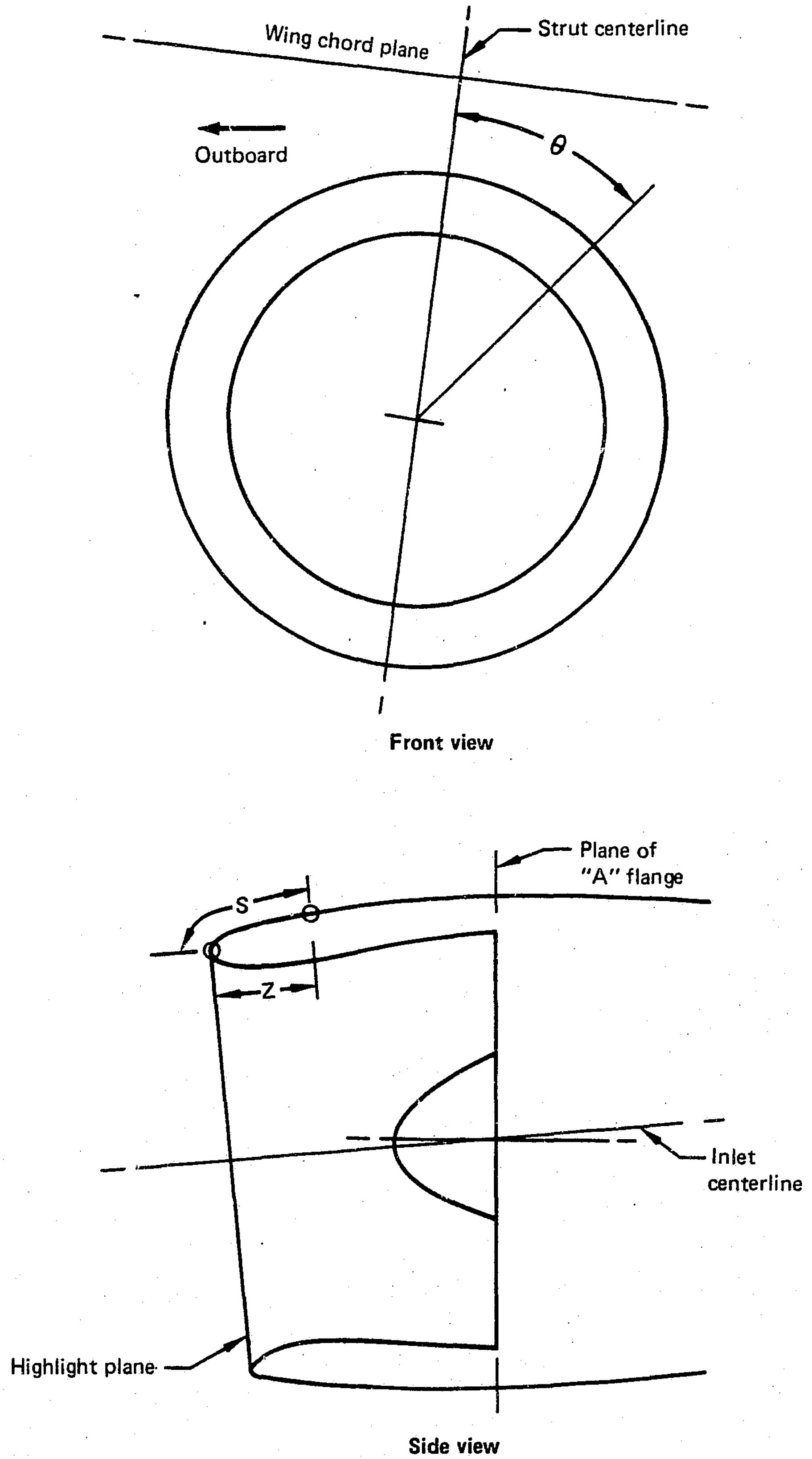


Figure A-1. Pressure Data Coordinate Conventions

ORIGINAL PAGE IS
OF POOR QUALITY

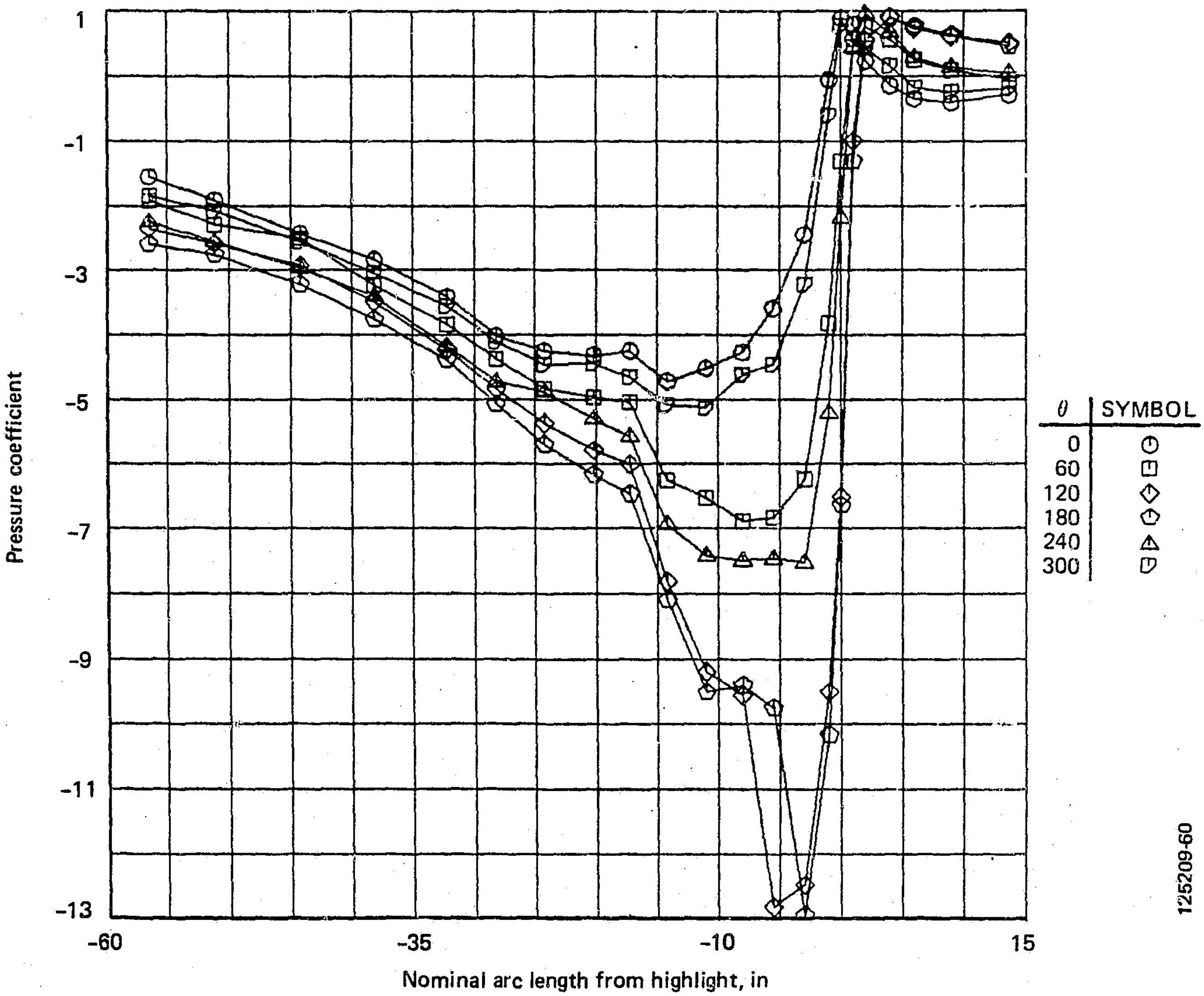


Figure A-2. Engine No. 3 Inlet Pressures, Condition 101, 612K GW Takeoff (Flaps 20)

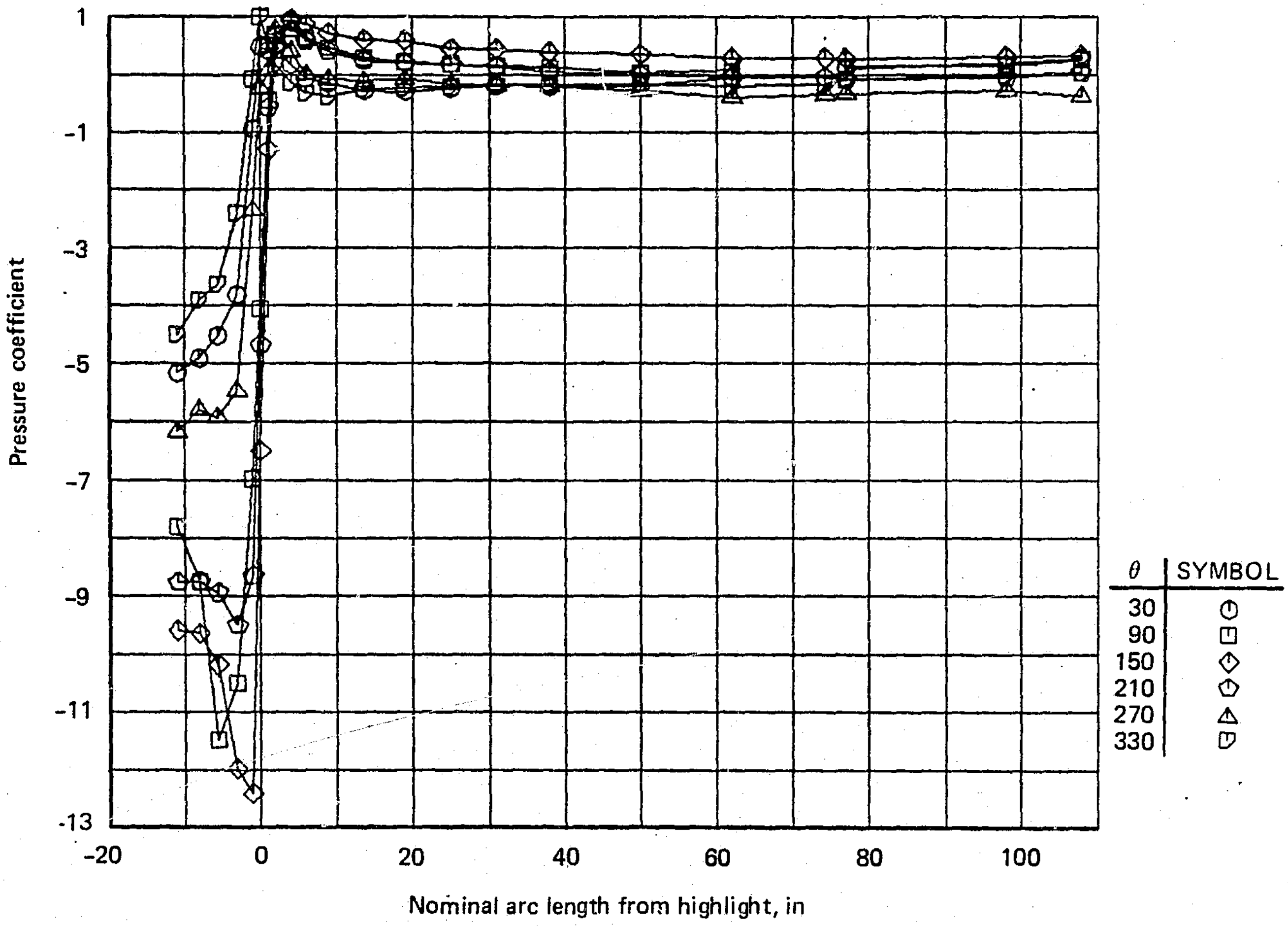


Figure A-3. Engine No. 3 Cowl Pressures, Condition 101, 612K GW Takeoff (Flaps 20)

ORIGINAL PAGE IS
OF POOR QUALITY

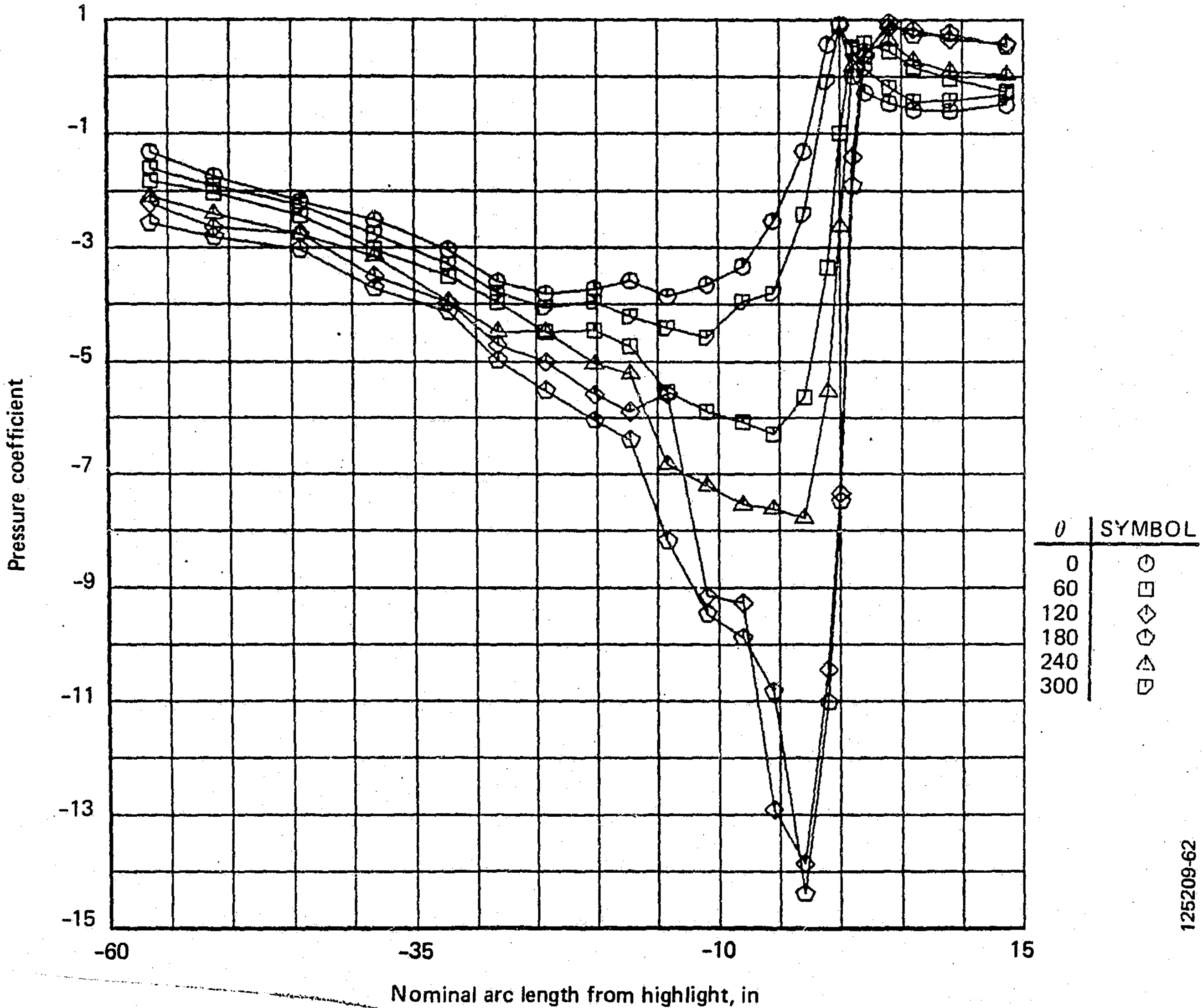


Figure A-4. Engine No. 3 Inlet Pressures, Condition 101, 538K GW Takeoff (Flaps 10)

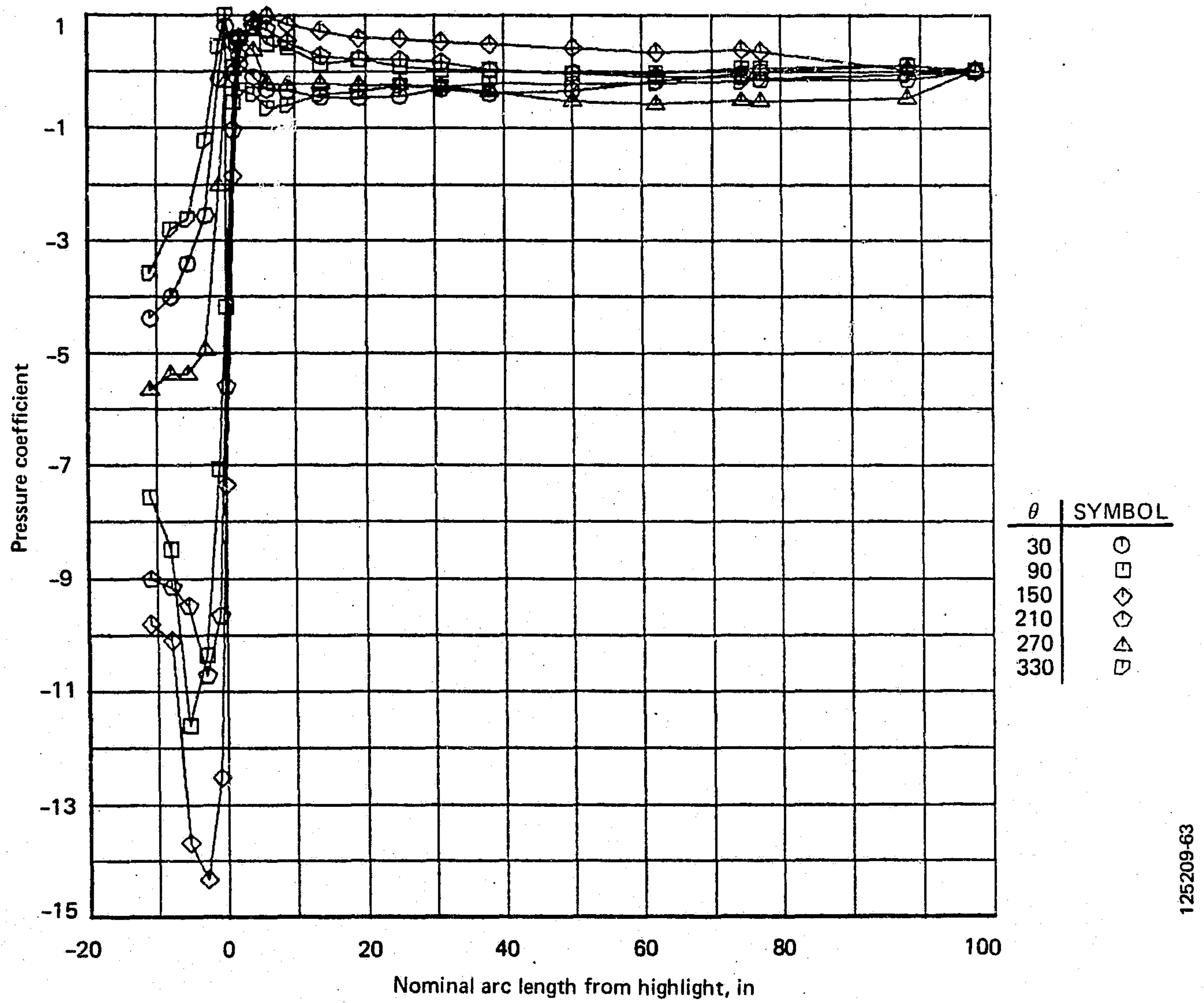


Figure A-5. Engine No. 3 Cowl Pressures, Condition 101, 538K GW Takeoff (Flaps 10)

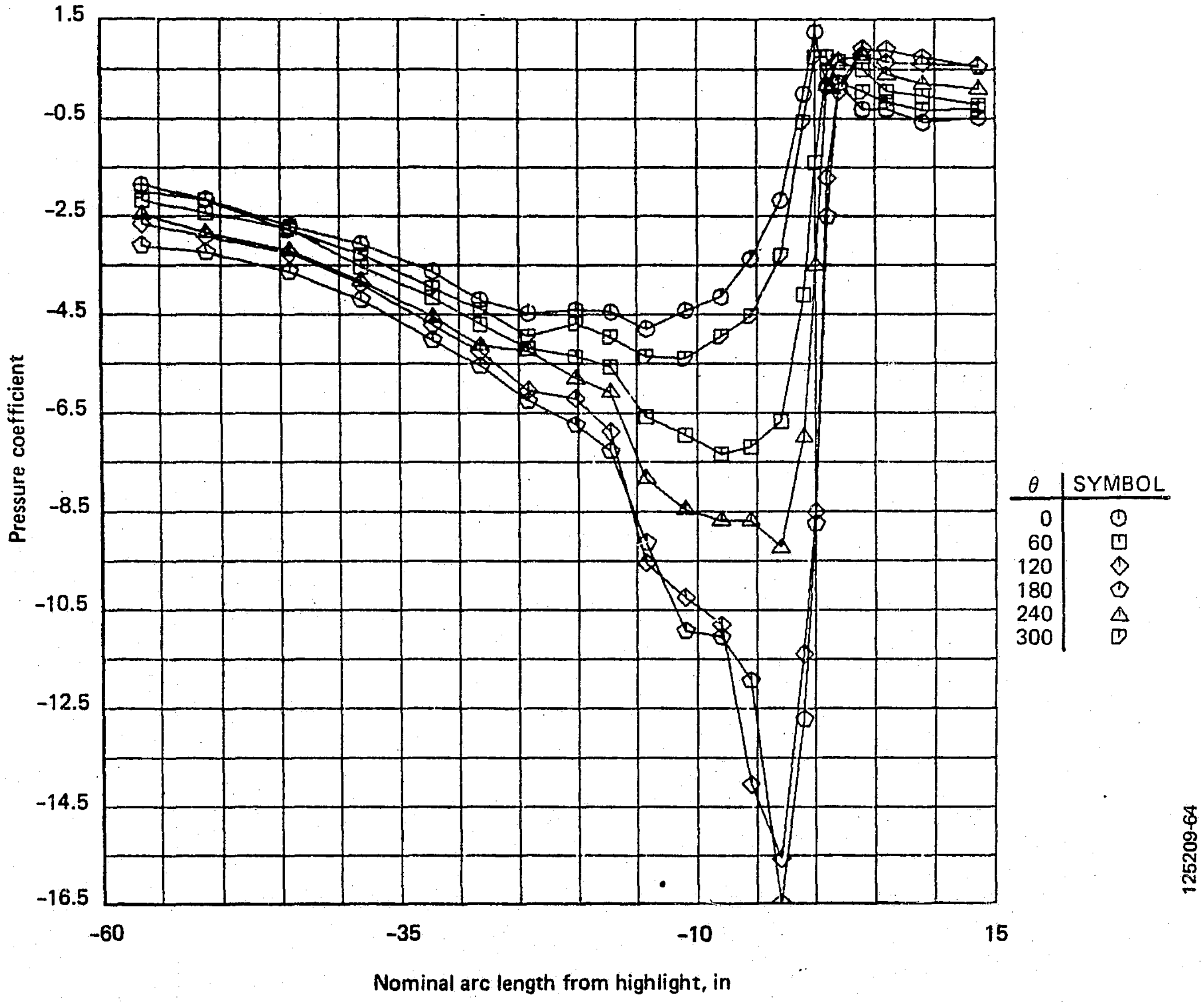


Figure A-6. Engine No. 3 Inlet Pressures, Condition 101, 647K GW Takeoff (Flaps 10)

ORIGINAL PAGE IS
OF POOR QUALITY

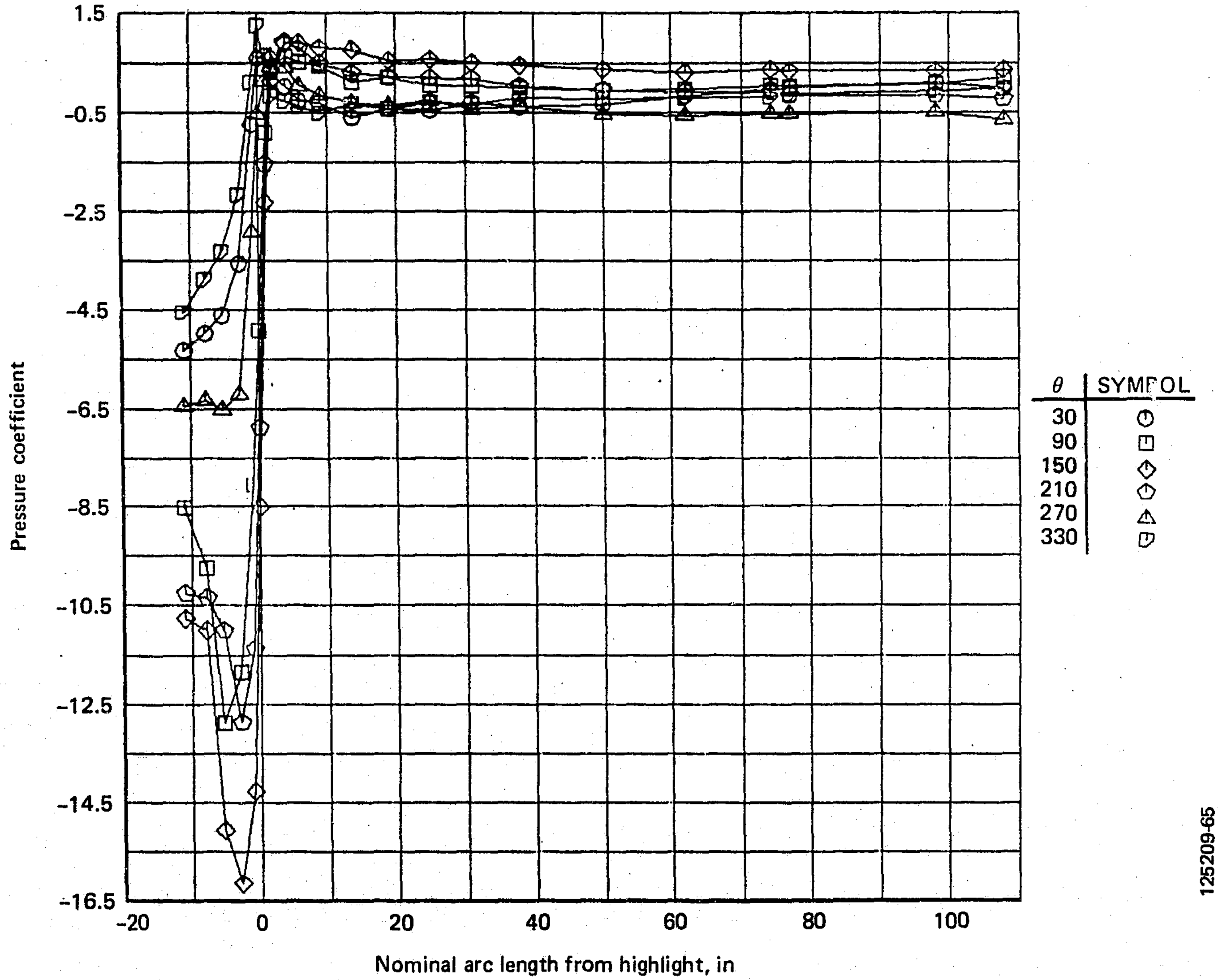


Figure A-7. Engine No. 3 Cowl Pressures, Condition 101, 647K GW Takeoff (Flaps 10)

ORIGINAL PAGE IS
OF POOR QUALITY

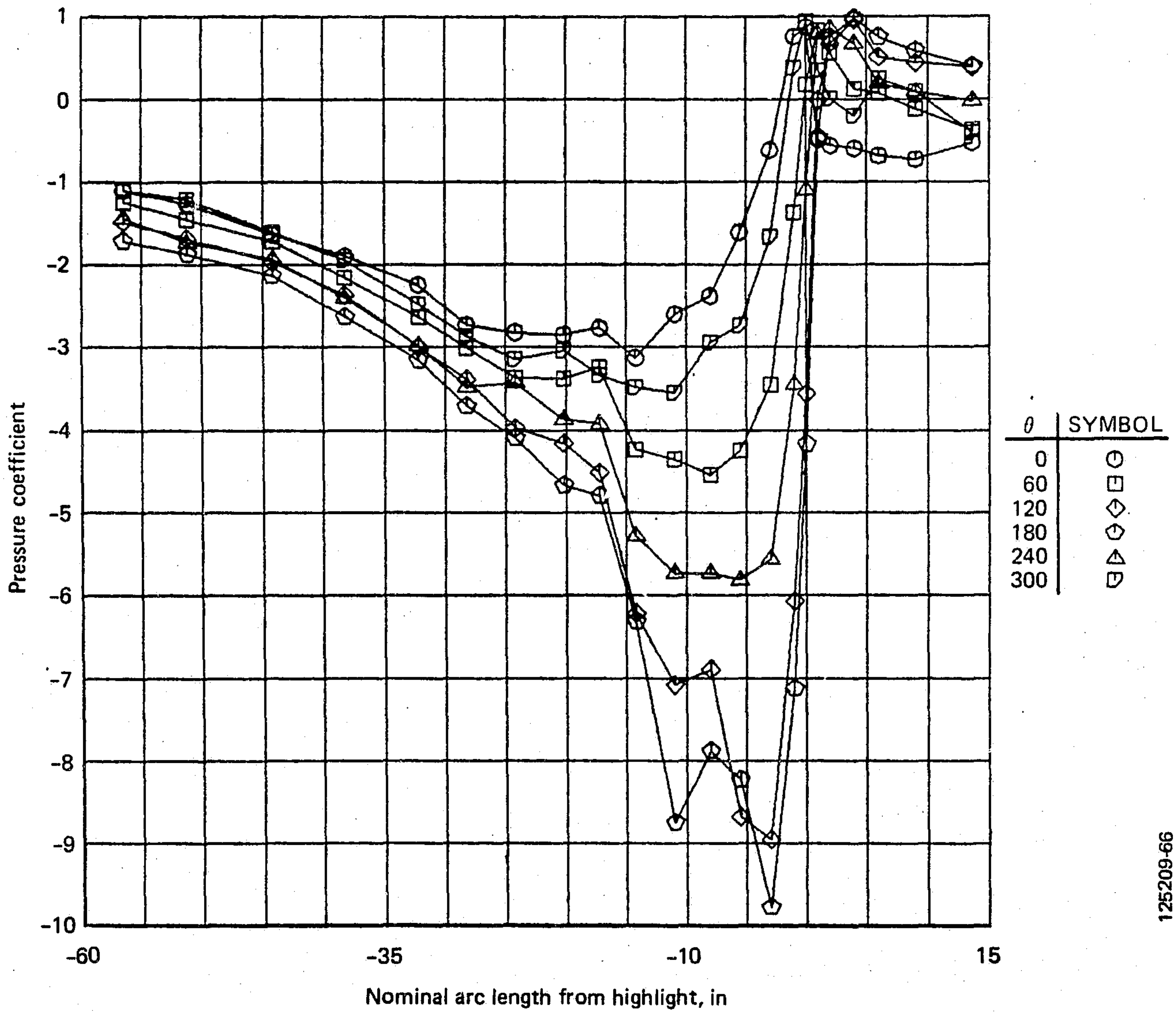


Figure A-8. Engine No. 3 Inlet Pressures, Condition 118, 780K GW Simulated Takeoff (Flaps 10)

ORIGINAL PAGE IS
OF POOR QUALITY

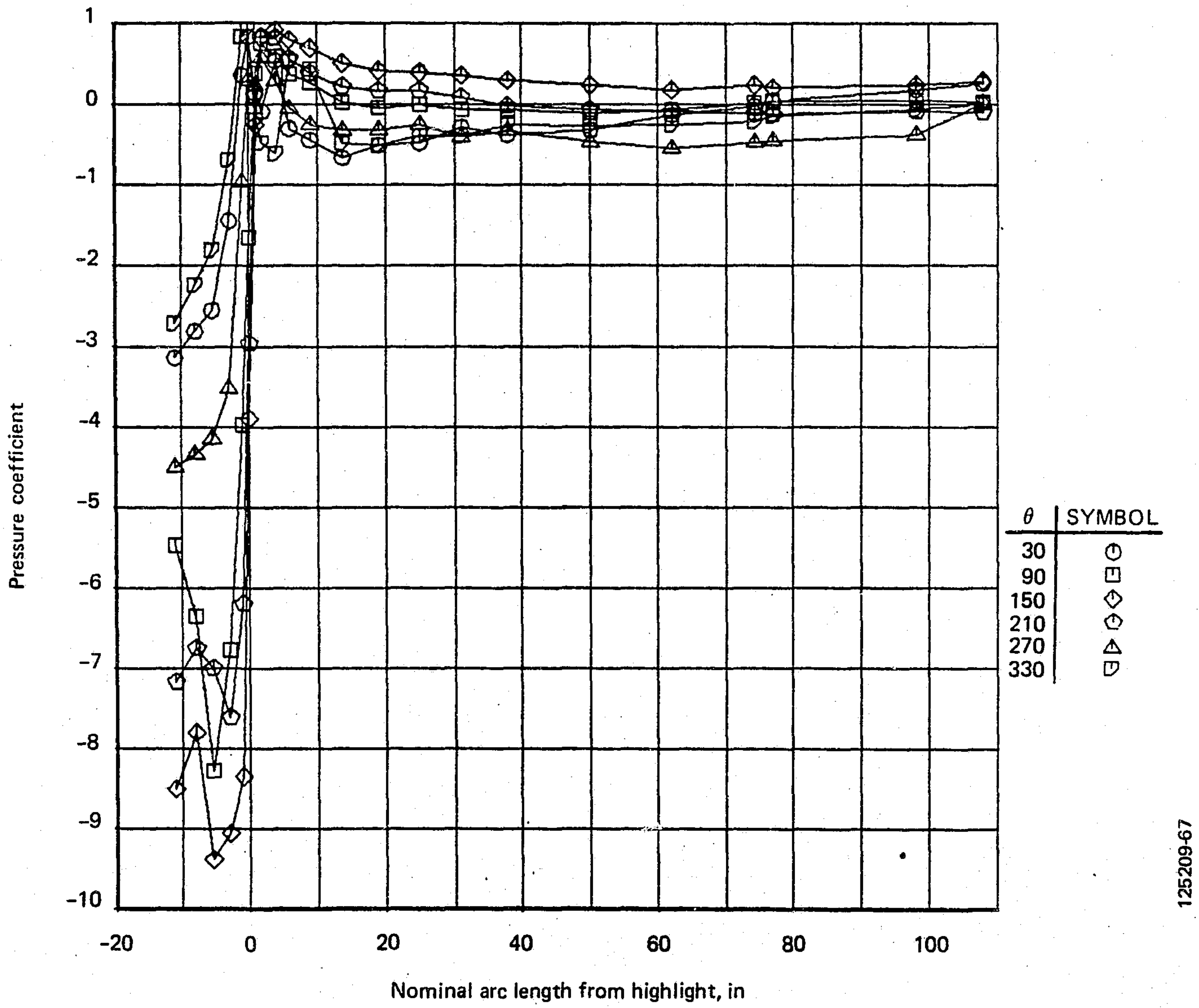


Figure A-9. Engine No. 3 Cowl Pressures, Condition 118, 780K GW Simulated Takeoff (Flaps 10)

ORIGINAL PAGE IS
OF POOR QUALITY

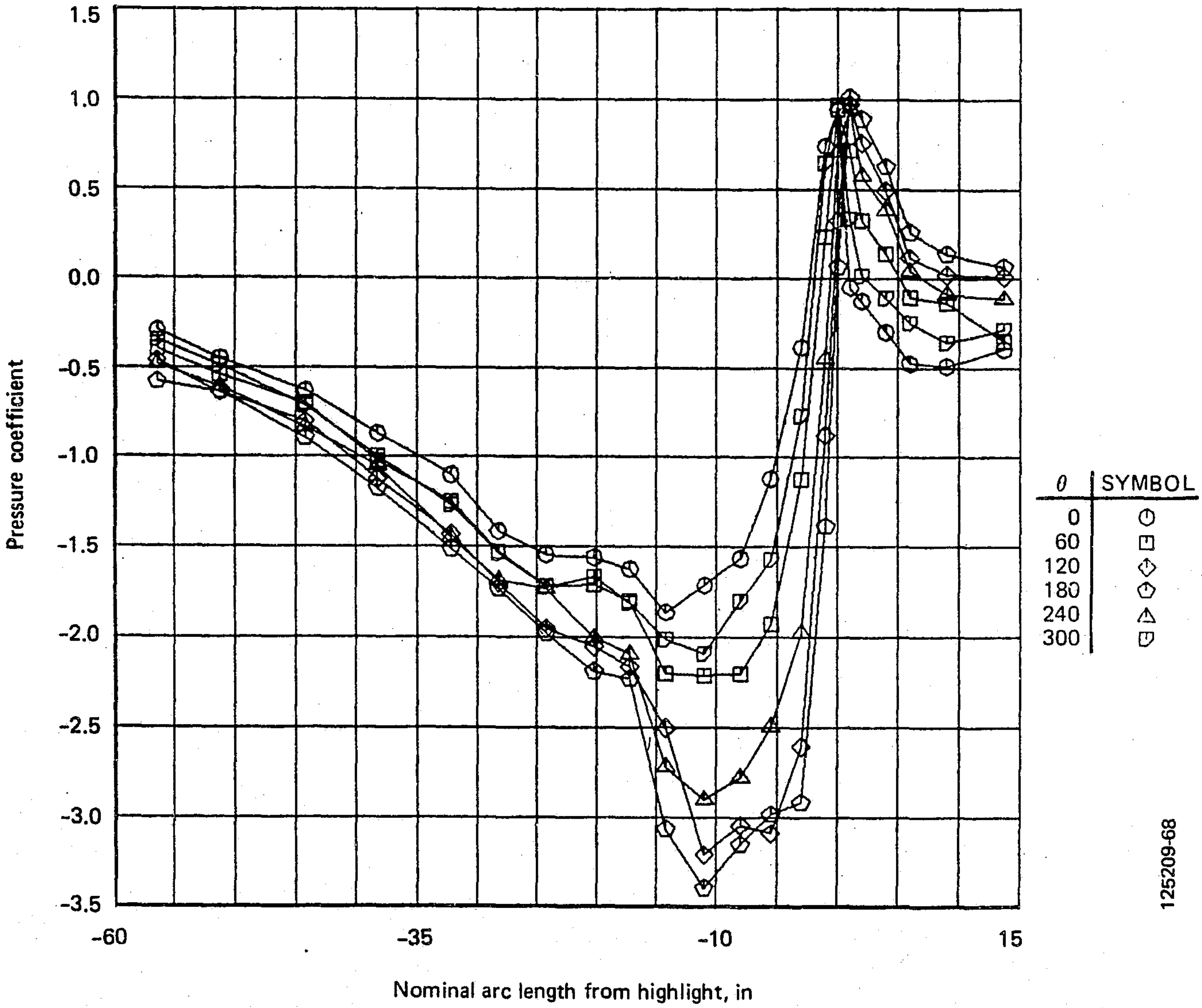


Figure A-10. Engine No. 3 Inlet Pressures, Condition 102, Low Climb

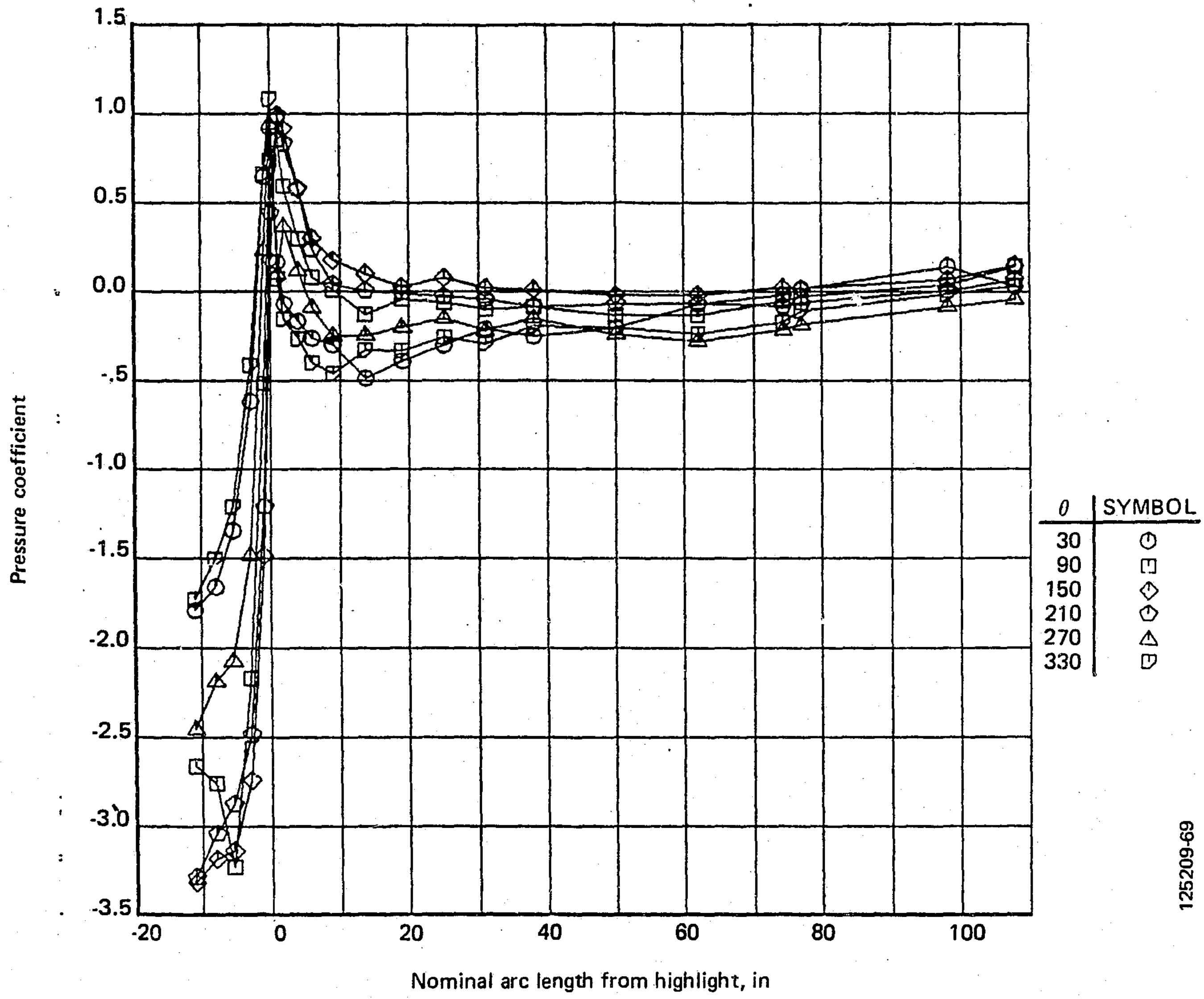


Figure A-11. Engine No. 3 Cowl Pressures, Condition 102, Low Climb

ORIGINAL PAGE IS
OF POOR QUALITY

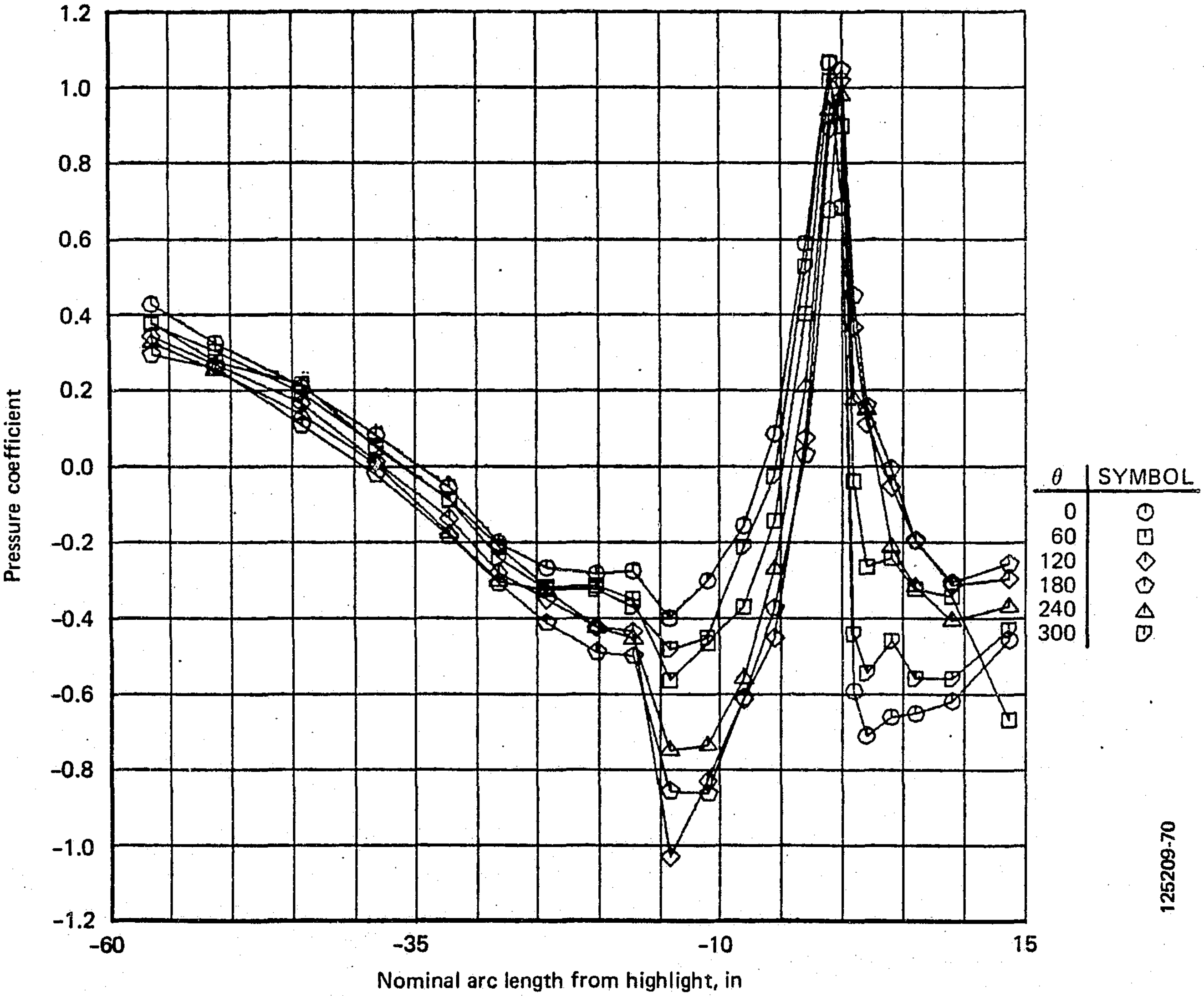


Figure A-12. Engine No. 3 Inlet Pressures, Condition 103, Mid Climb

ORIGINAL PAGE IS
OF POOR QUALITY

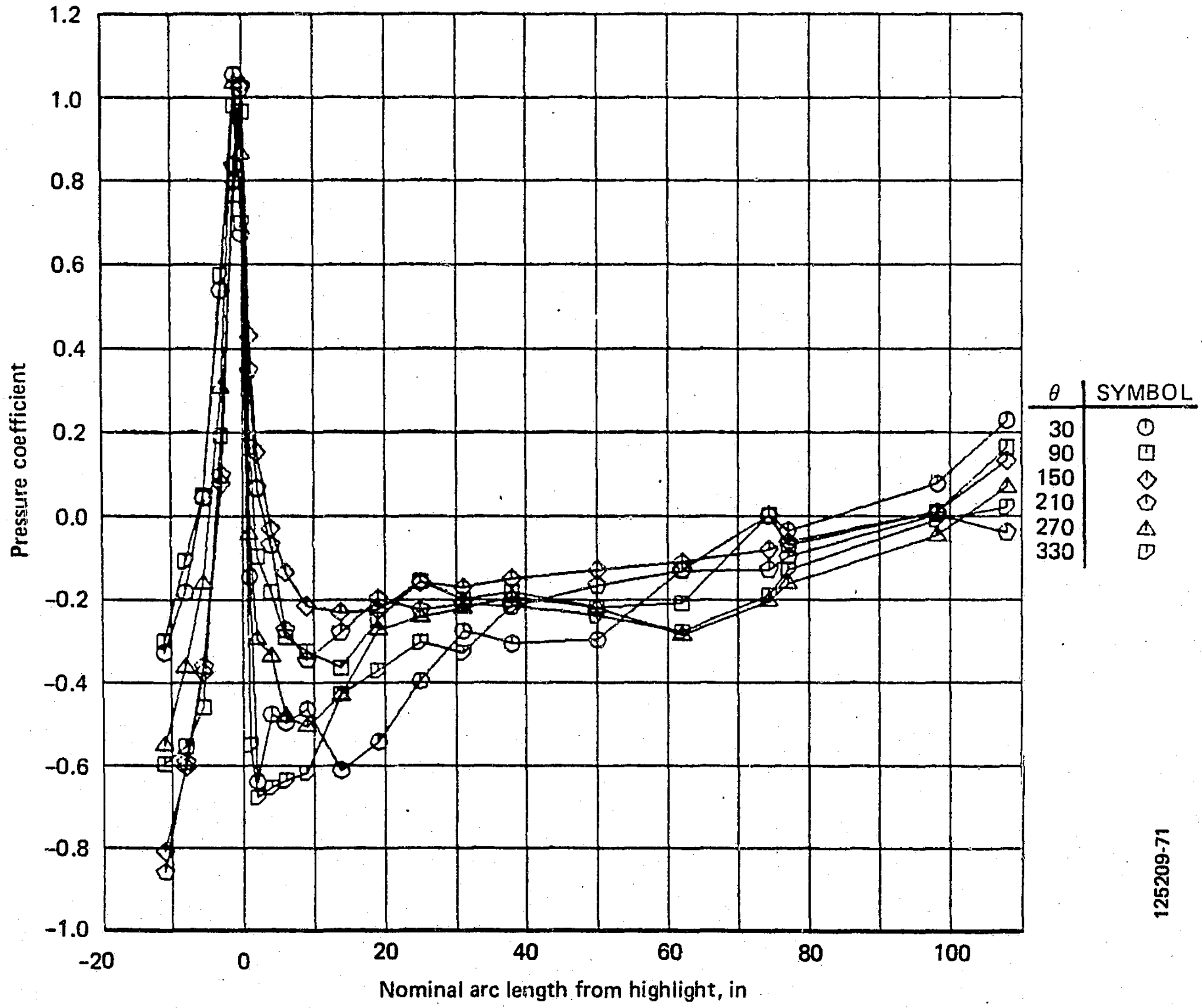


Figure A-13. Engine No. 3 Cowl Pressures, Condition 103, Mid Climb

ORIGINAL PAGE IS
OF POOR QUALITY

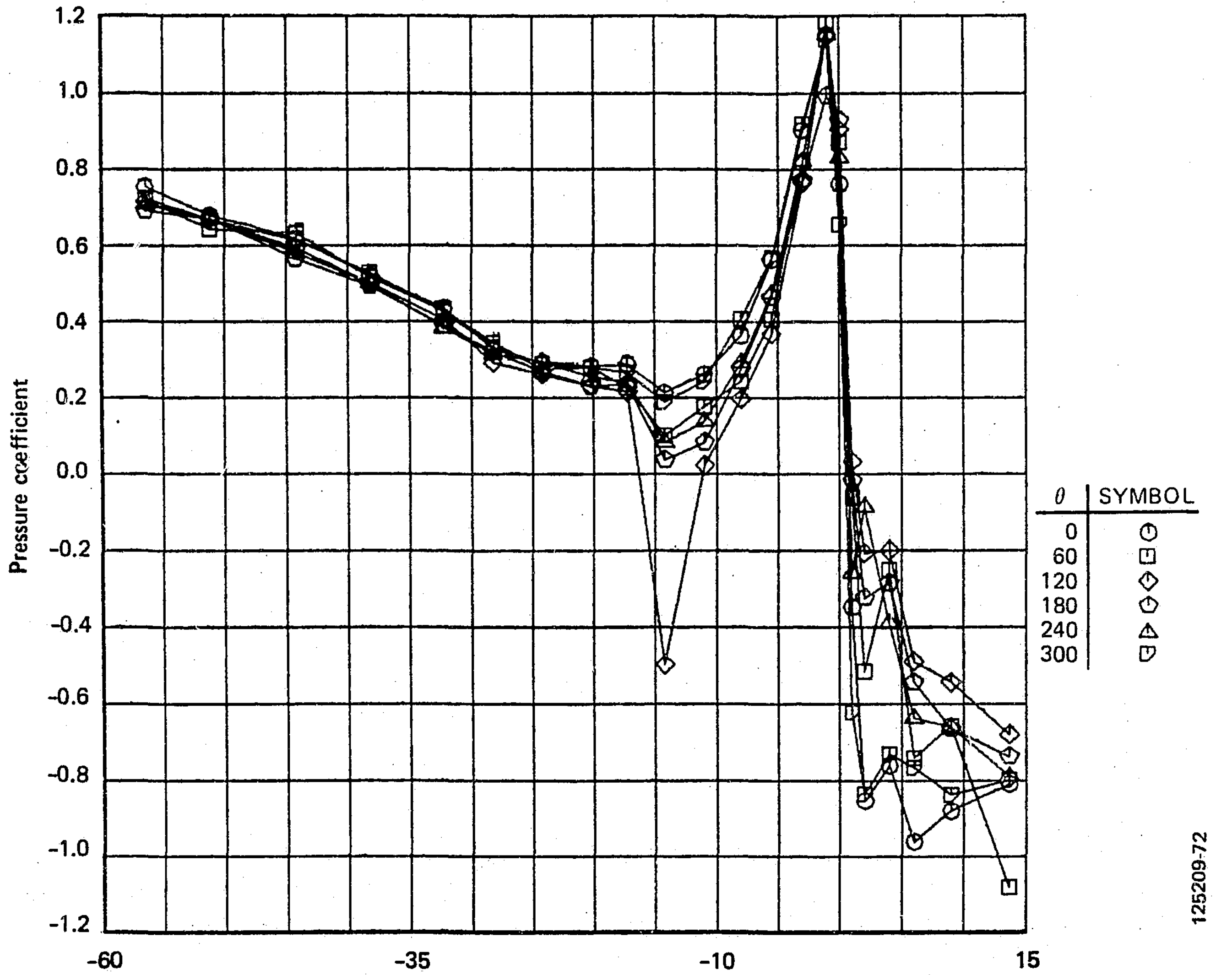


Figure A-14. Engine No. 3 Inlet Pressures, Condition 104, High M Cruise

ORIGINAL PAGE IS
OF POOR QUALITY

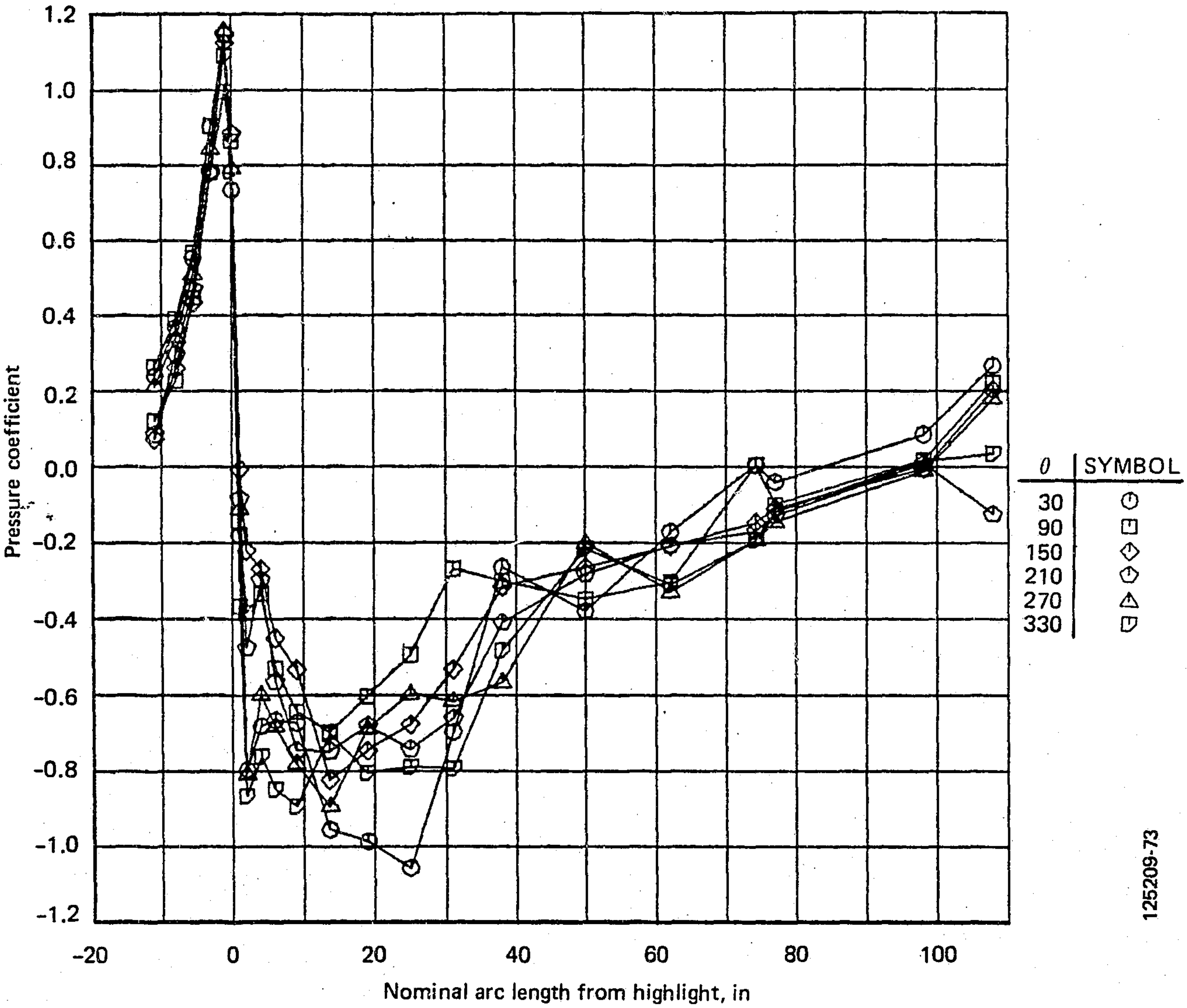


Figure A-15. Engine No. 3 Cowl Pressures, Condition 104, High M Cruise

ORIGINAL PAGE IS
OF POOR QUALITY

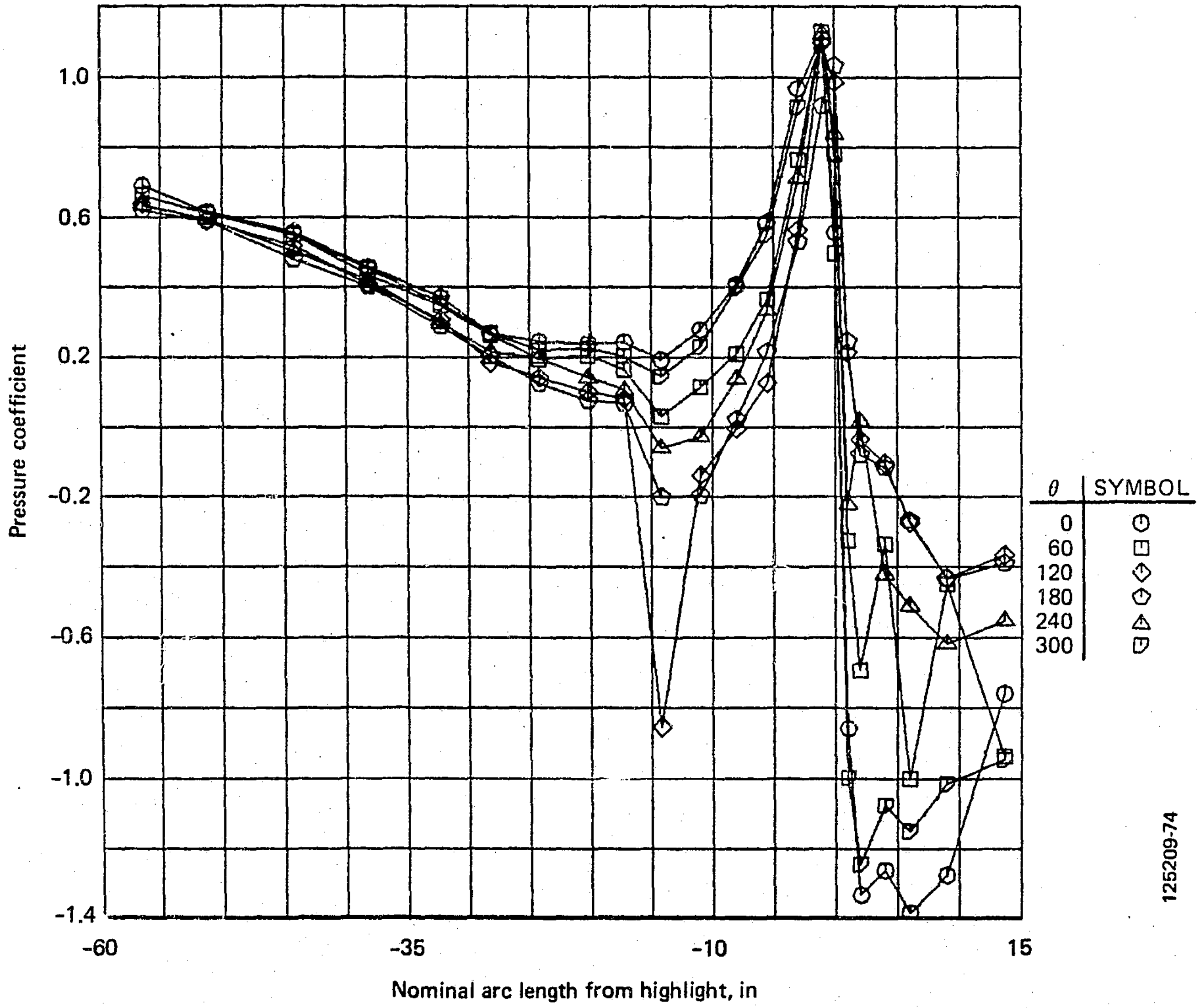


Figure A-16. Engine No. 3 Inlet Pressures, Condition 105, Low M Cruise

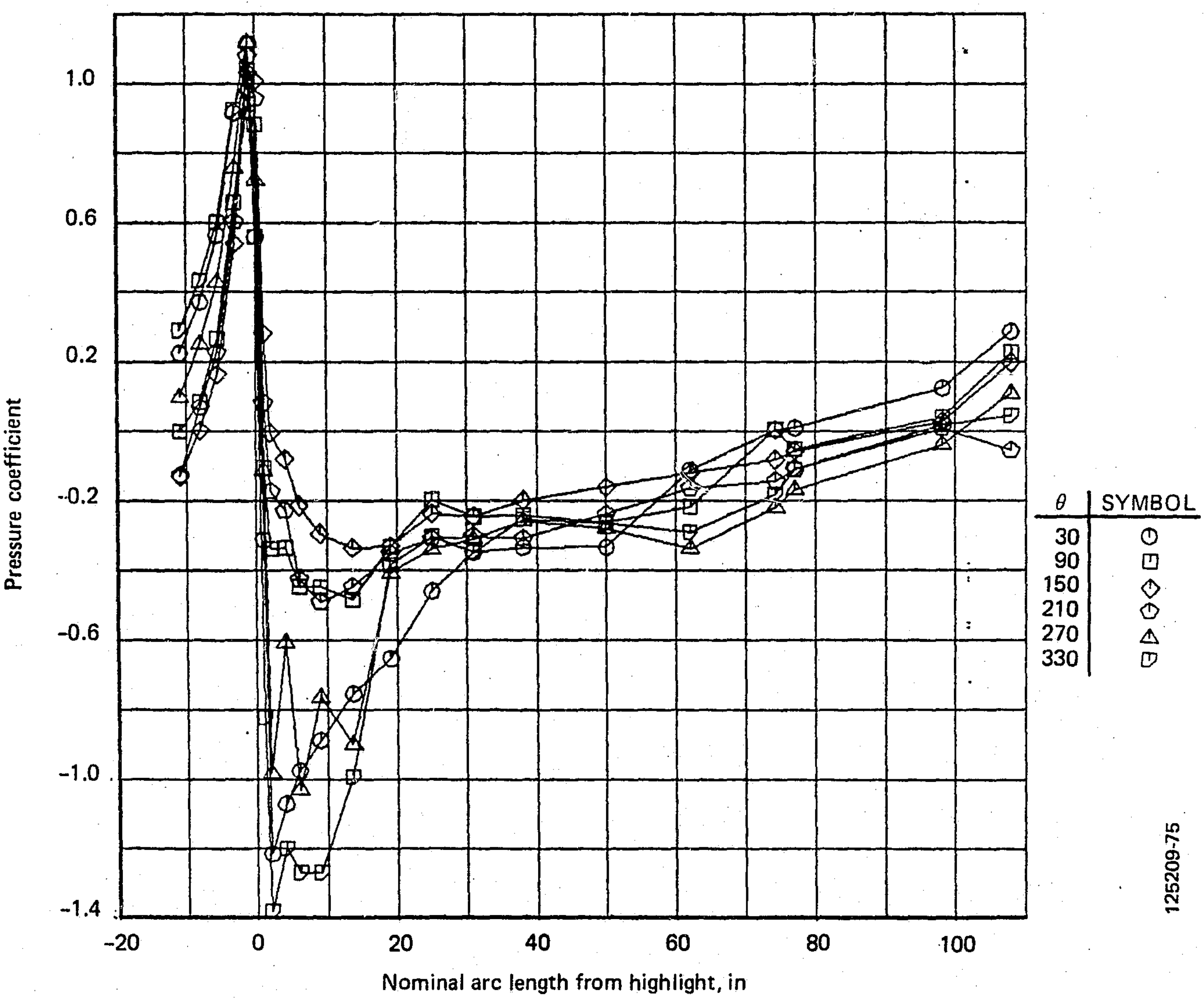


Figure A-17. Engine No. 3 Cowl Pressures, Condition 105, Low M Cruise

ORIGINAL PAGE IS
OF POOR QUALITY

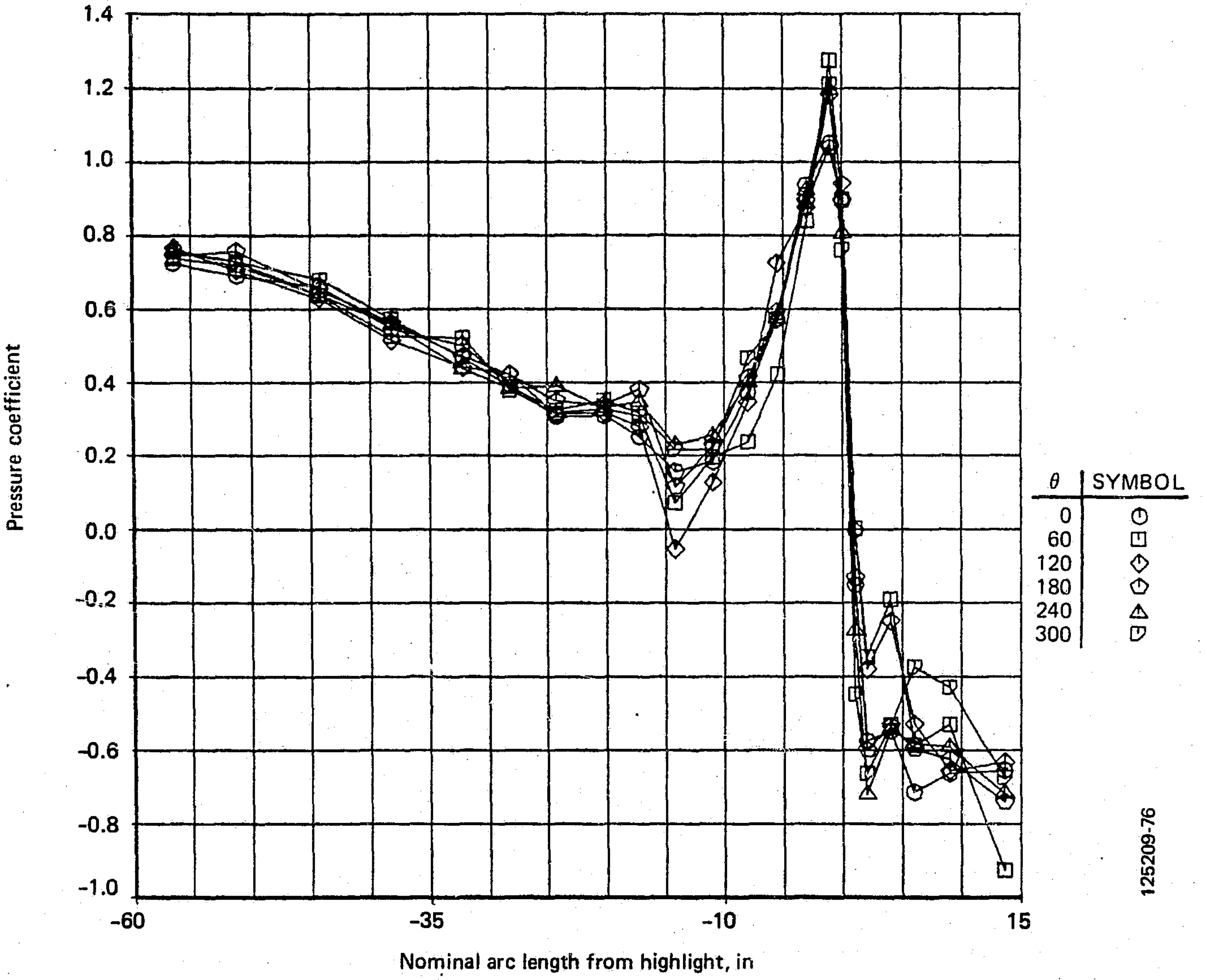


Figure A-18. Engine No. 3 Inlet Pressures, Condition 106, Maximum M

ORIGINAL PAGE IS
OF POOR QUALITY

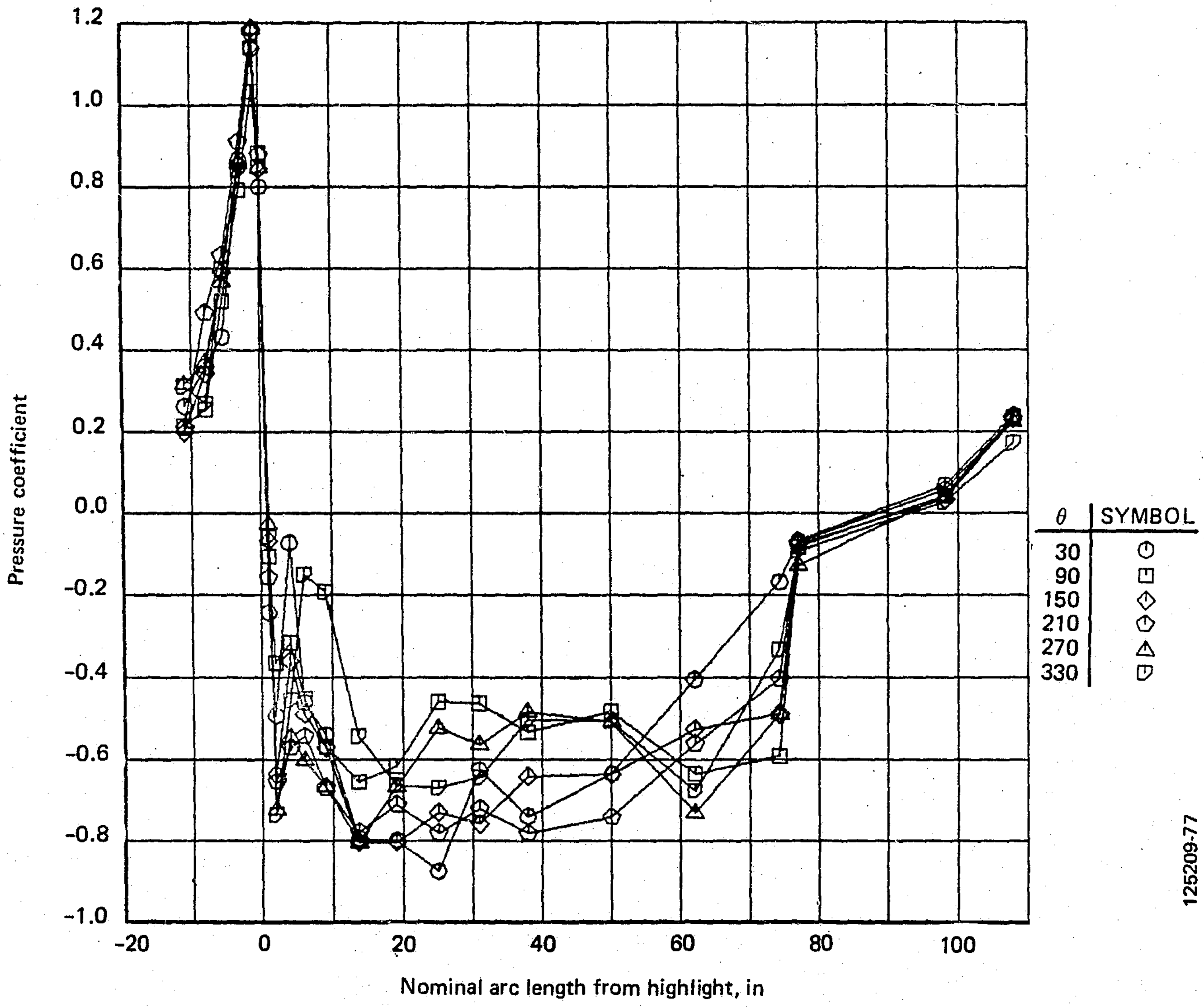


Figure A-19. Engine No. 3 Cowl Pressures, Condition 106, Maximum M

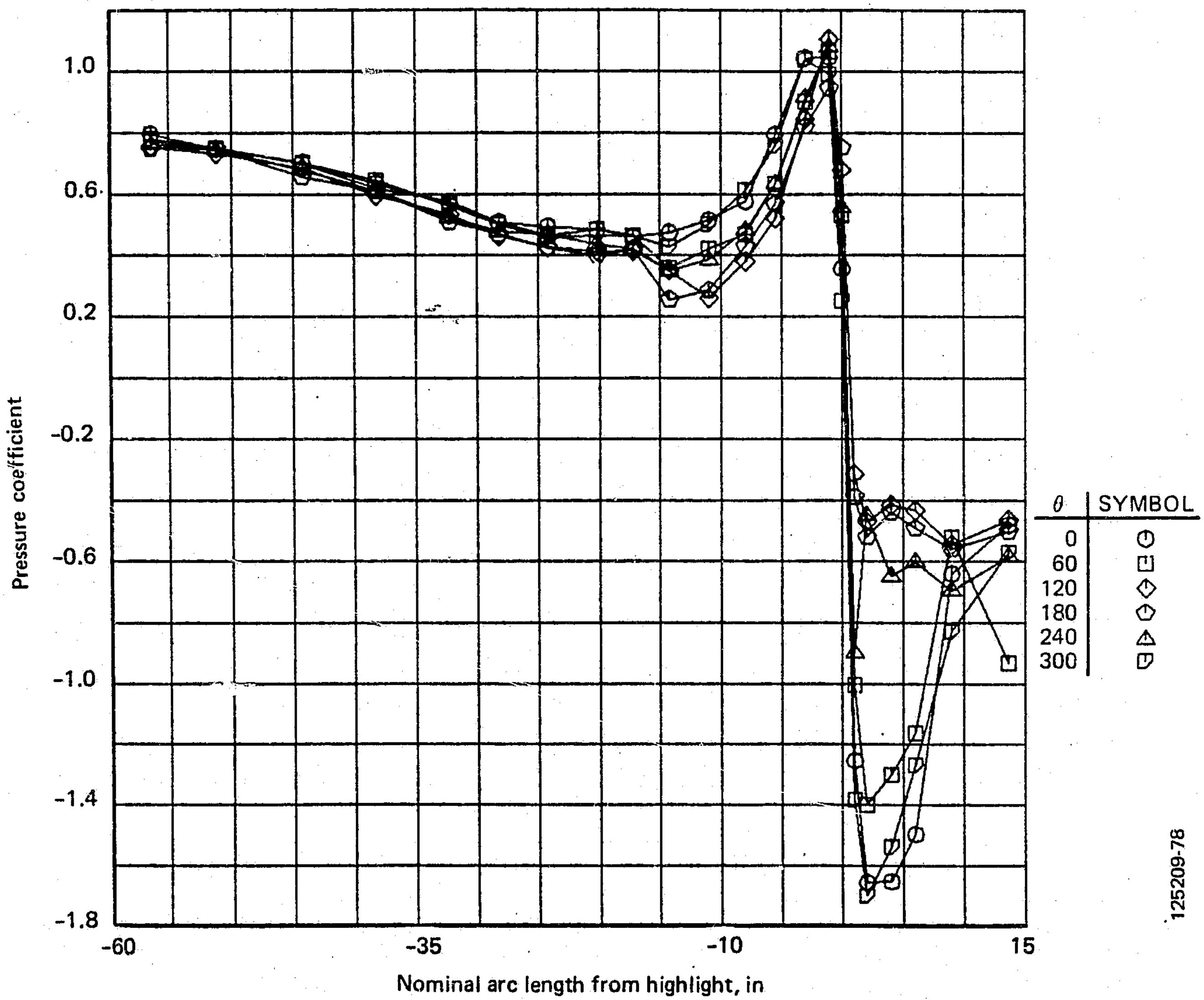


Figure A-20. Engine No. 3 Inlet Pressures, Condition 107, Inflight Relight

ORIGINAL PAGE IS
OF POOR QUALITY

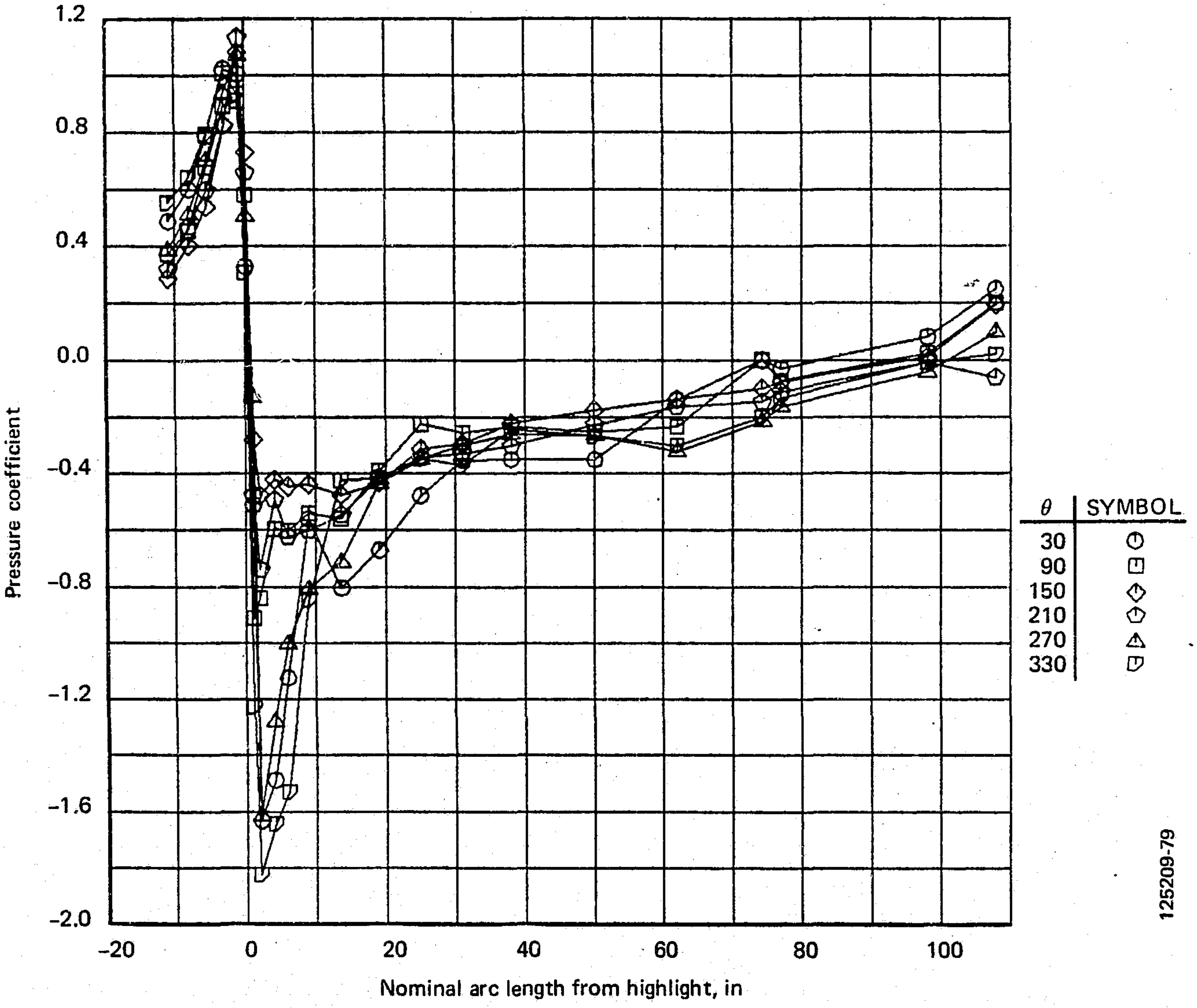


Figure A-21. Engine No. 3 Cowl Pressures, Condition 107, Inflight Relight

ORIGINAL PAGE IS
OF POOR QUALITY

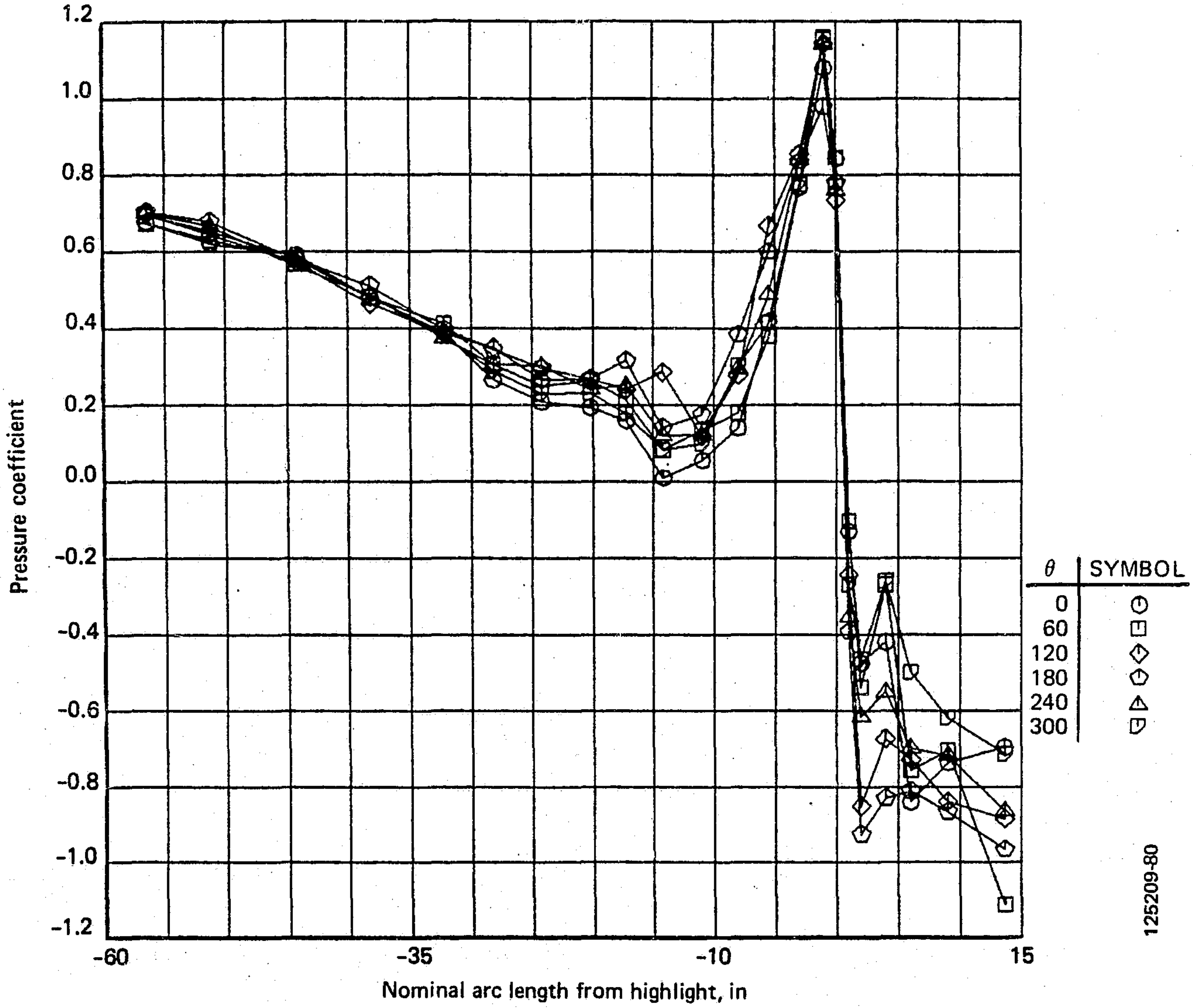


Figure A-22. Engine No. 3 Inlet Pressures, Condition 108, Maximum q

ORIGINAL PAGE IS
OF POOR QUALITY

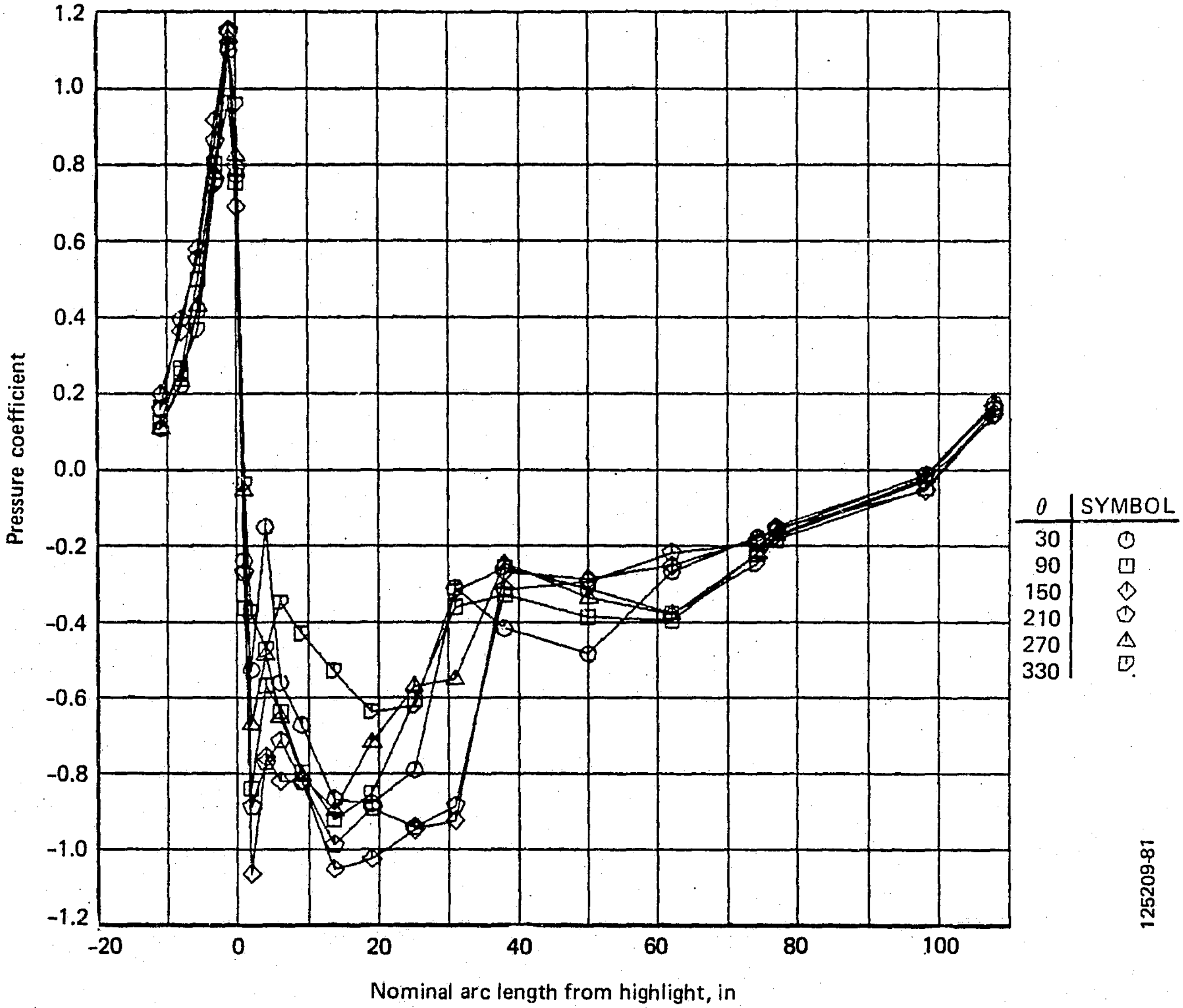


Figure A-23. Engine No. 3 Cowl Pressures, Condition 108, Maximum q

ORIGINAL PAGE IS
OF POOR QUALITY

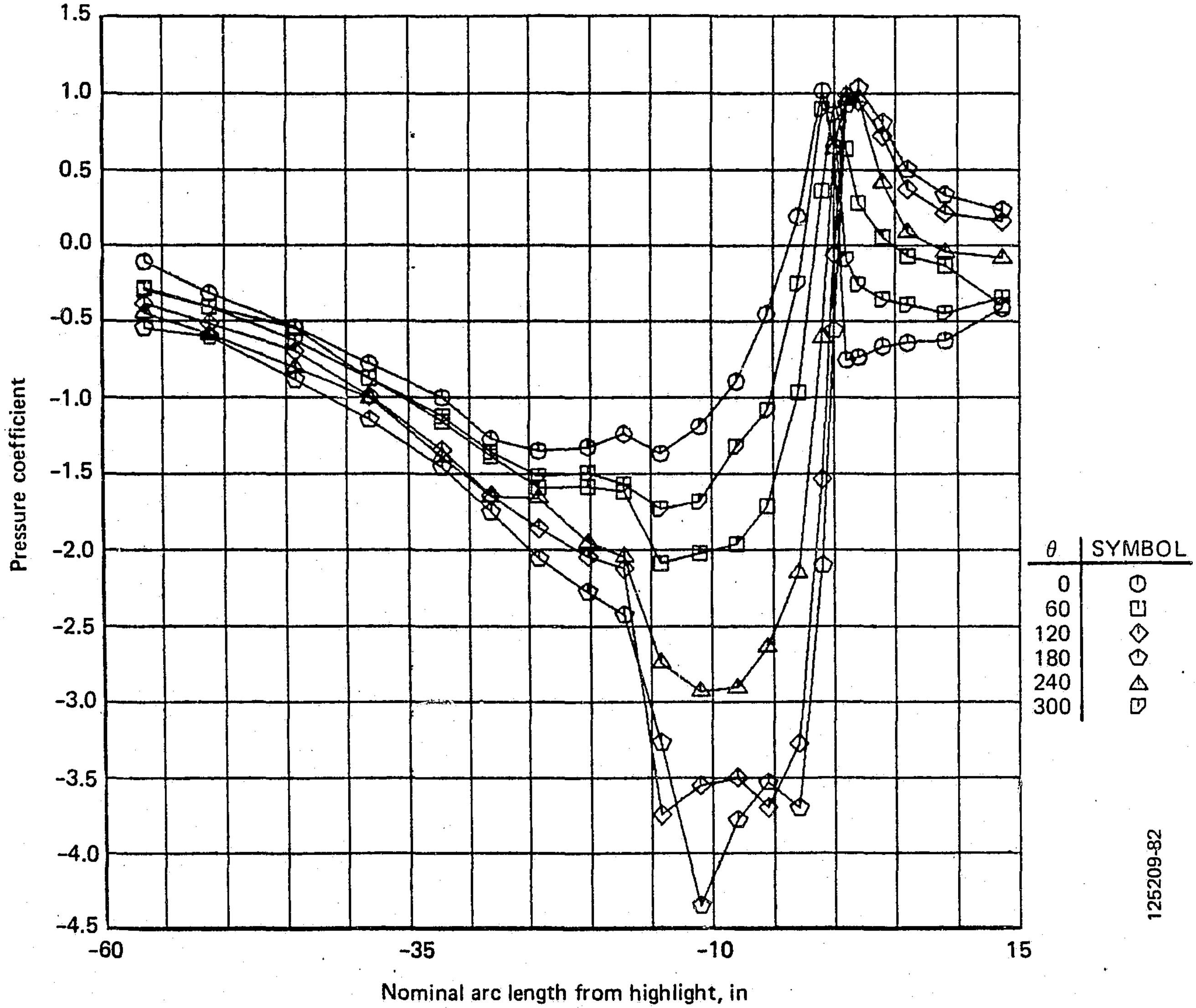


Figure A-24. Engine No. 3 Inlet Pressures, Condition 109, Stall Warning (Flaps Up)

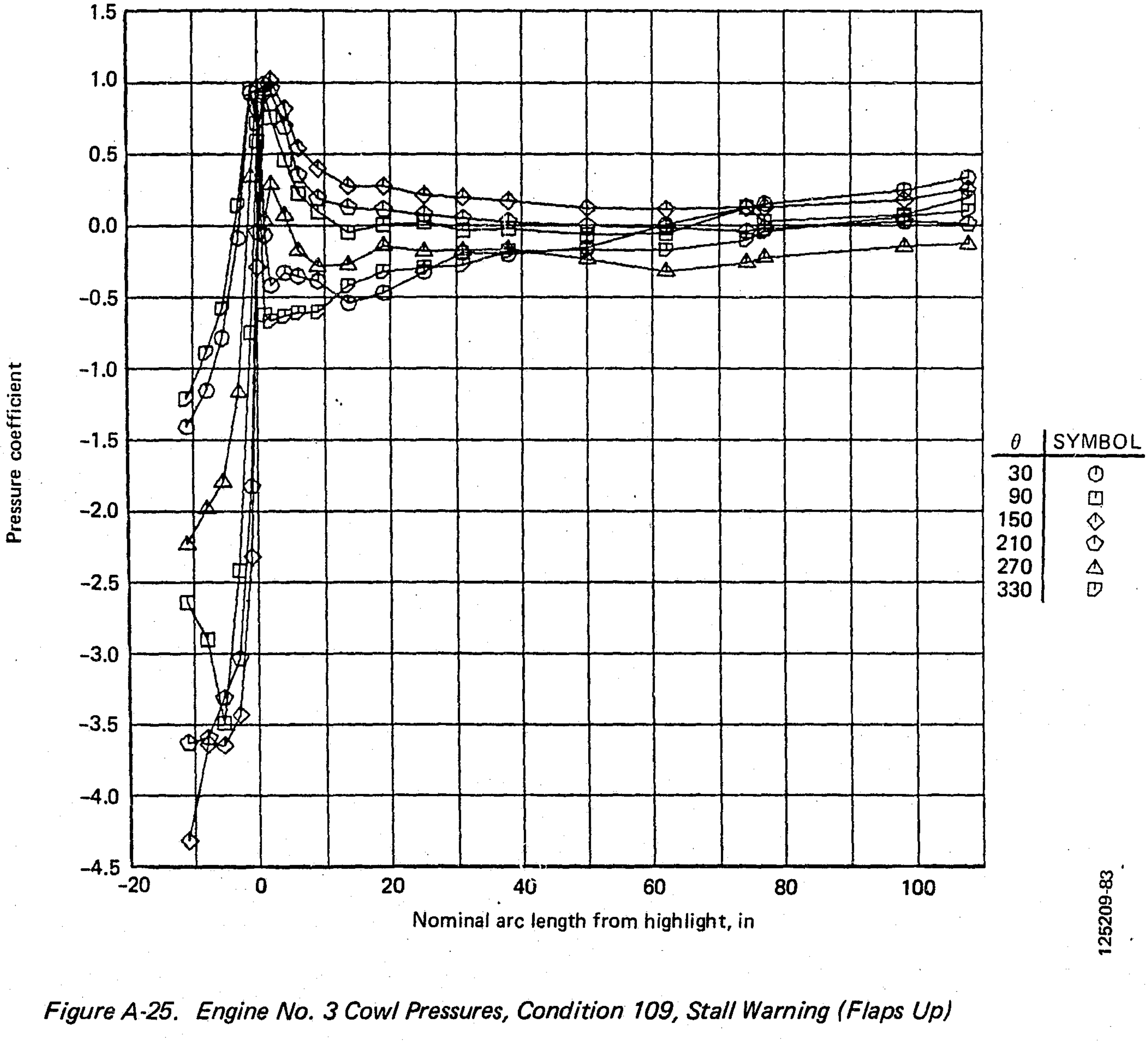


Figure A-25. Engine No. 3 Cowl Pressures, Condition 109, Stall Warning (Flaps Up)

ORIGINAL PAGE IS
OF POOR QUALITY

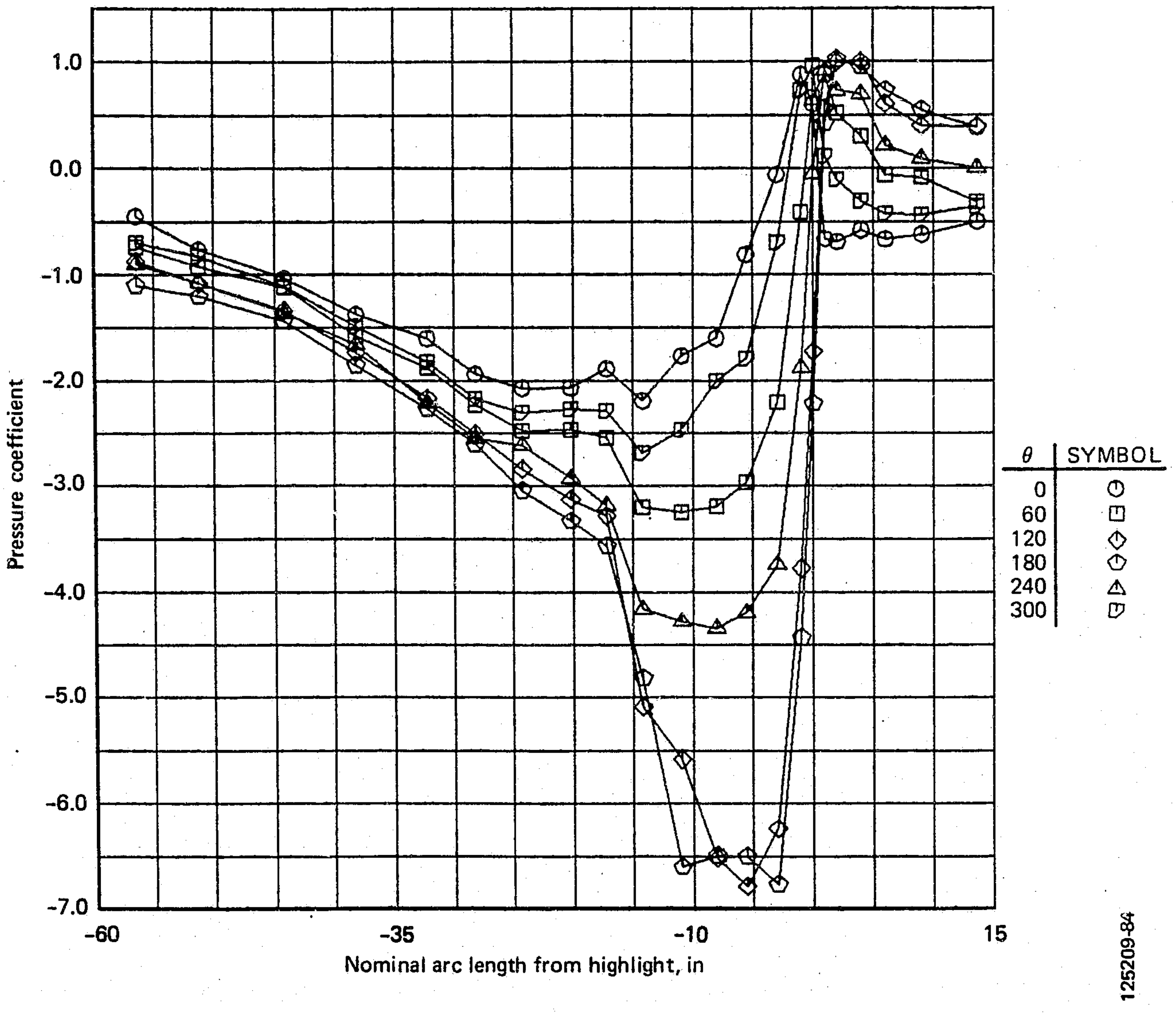


Figure A-26. Engine No. 3 Inlet Pressures, Condition 110, Stall Warning (Flaps 10)

ORIGINAL PAGE IS
OF POOR QUALITY

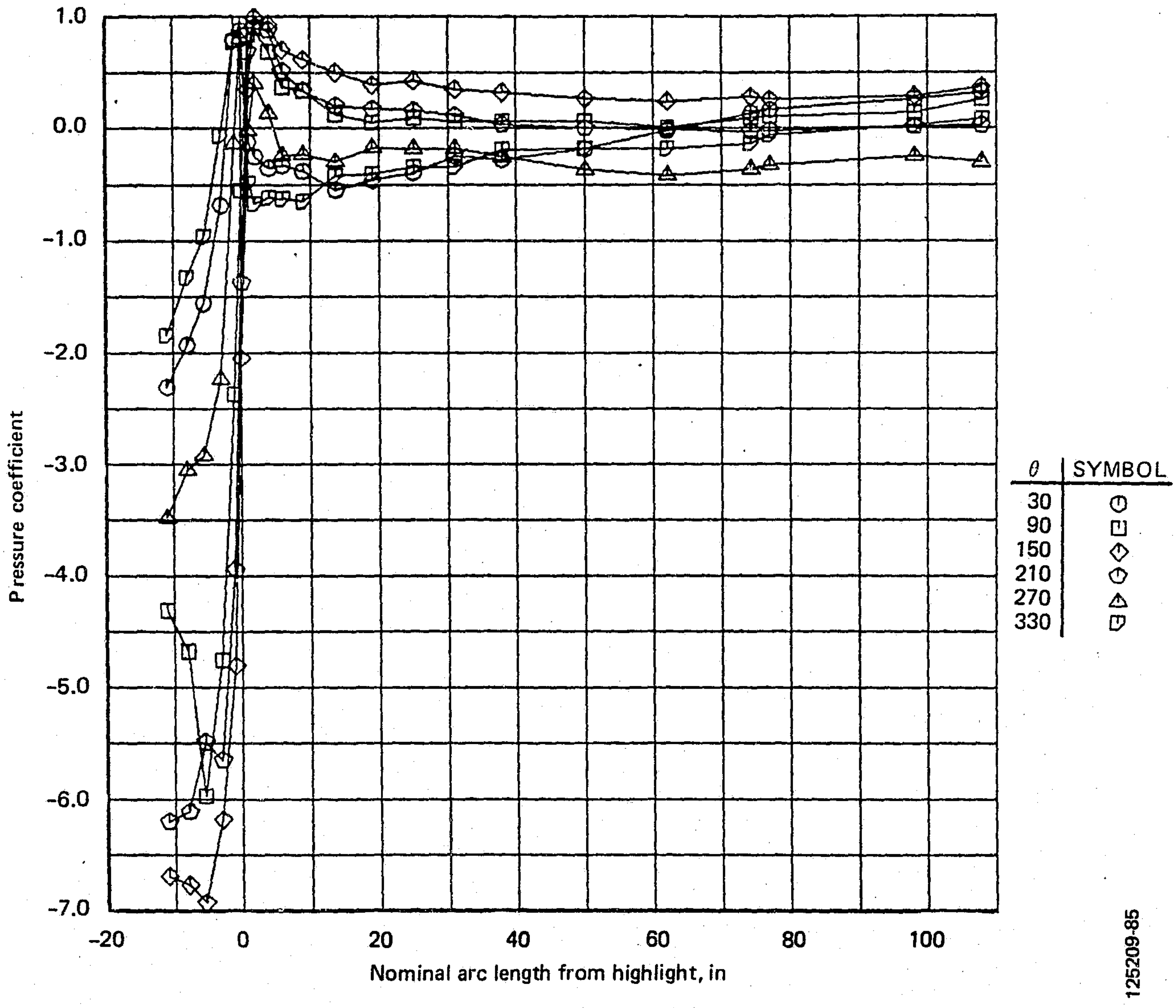


Figure A-27. Engine No. 3 Cowl Pressures, Condition 110, Stall Warning (Flaps 10)

ORIGINAL PAGE IS
OF POOR QUALITY

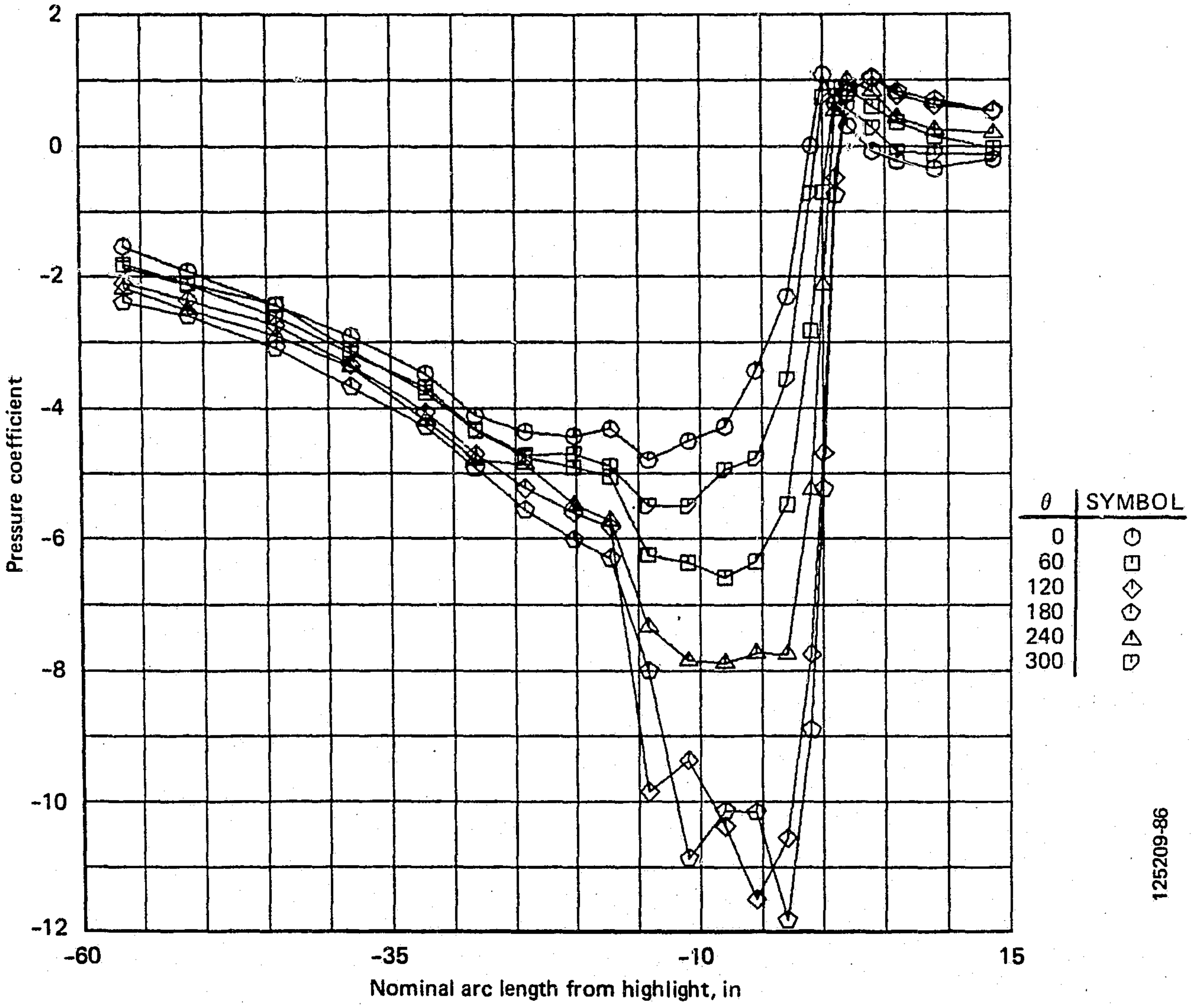


Figure A-28. Engine No. 3 Inlet Pressures, Condition 111, Stall Warning (Flaps 30)

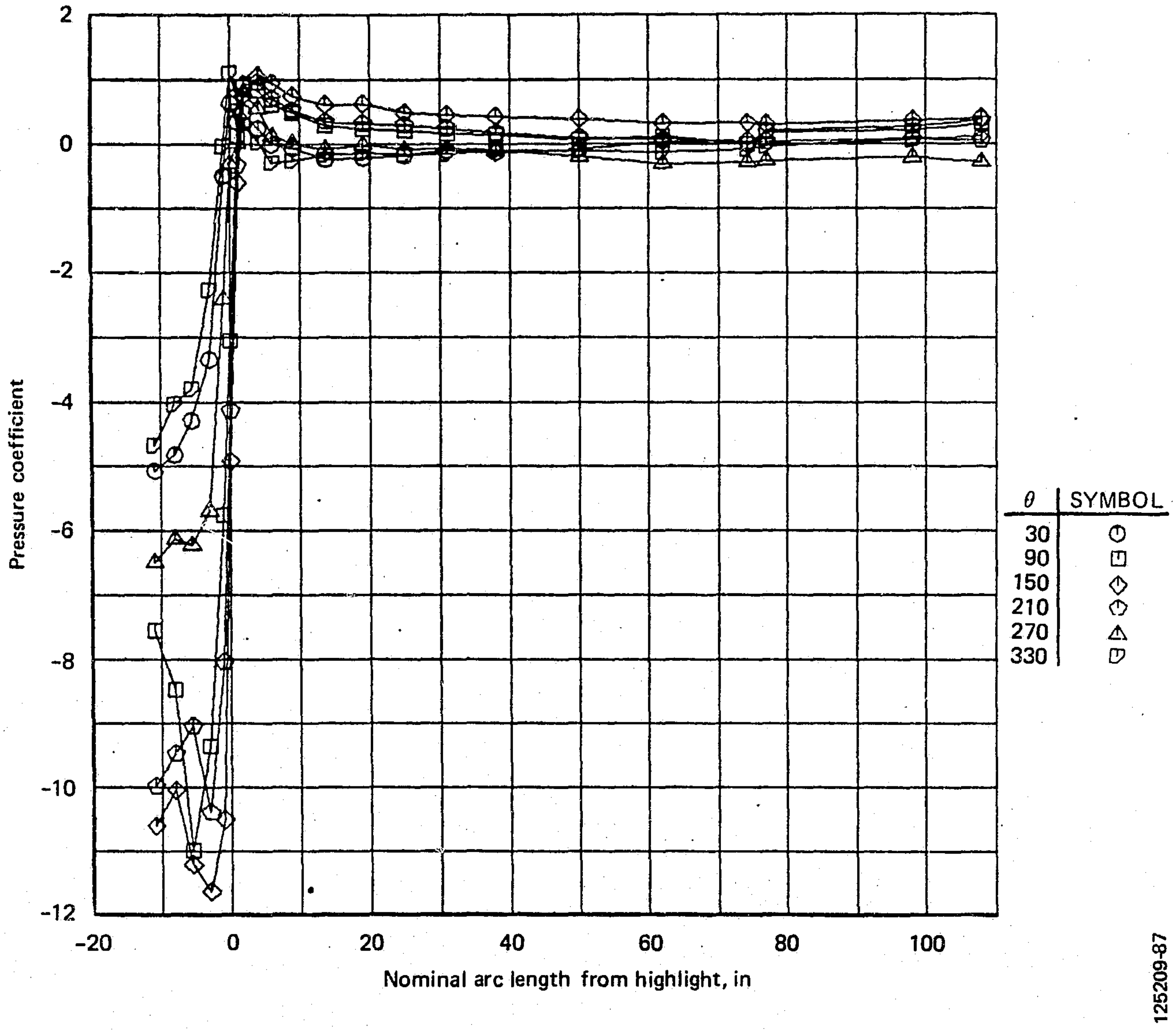


Figure A-29. Engine No. 3 Cowl Pressures, Condition 111, Stall Warning (Flaps 30)

ORIGINAL PAGE IS
OF POOR QUALITY

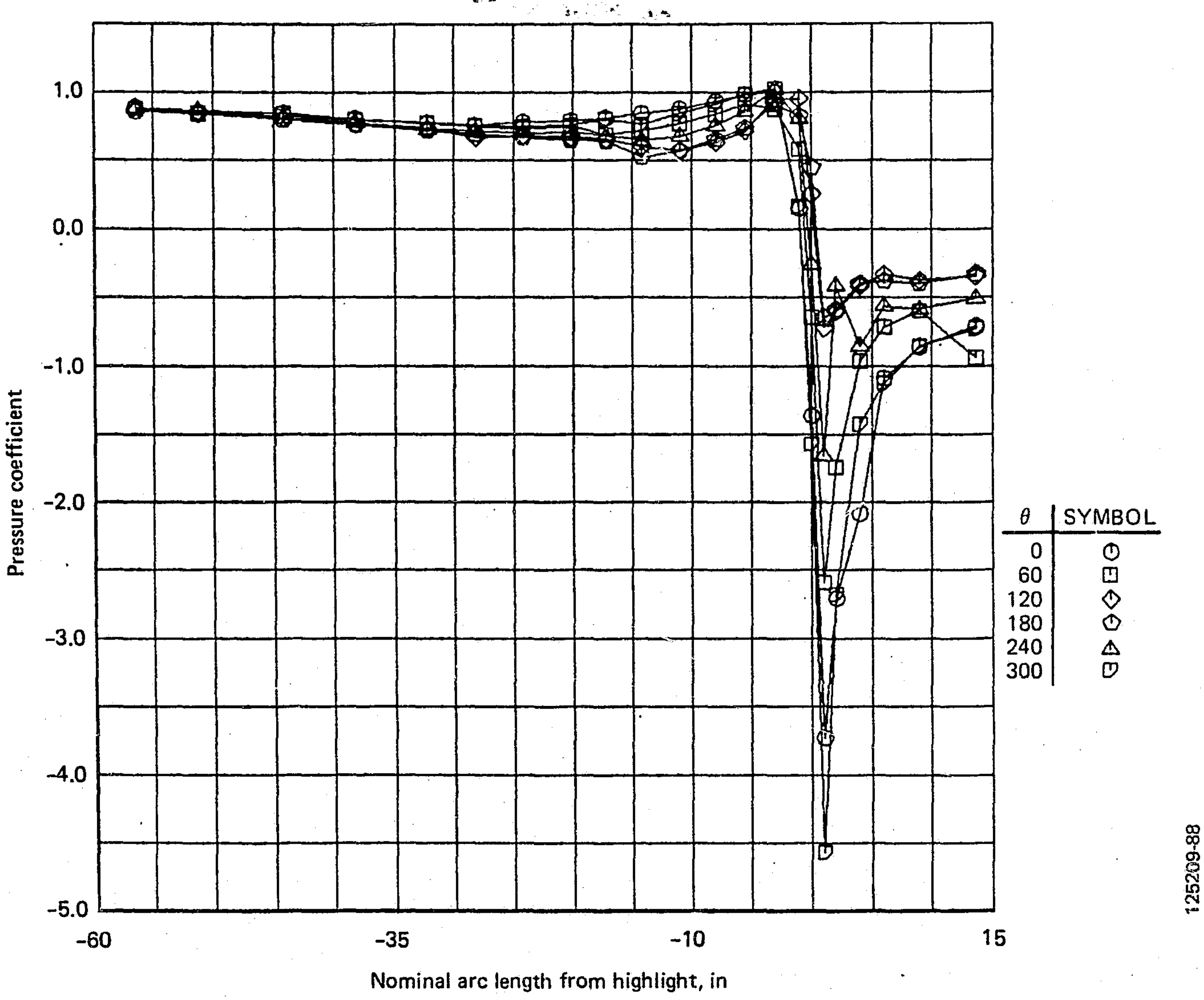


Figure A-30. Engine No. 3 Inlet Pressures, Condition 112, Idle Descent

ORIGINAL PAGE IS
OF POOR QUALITY

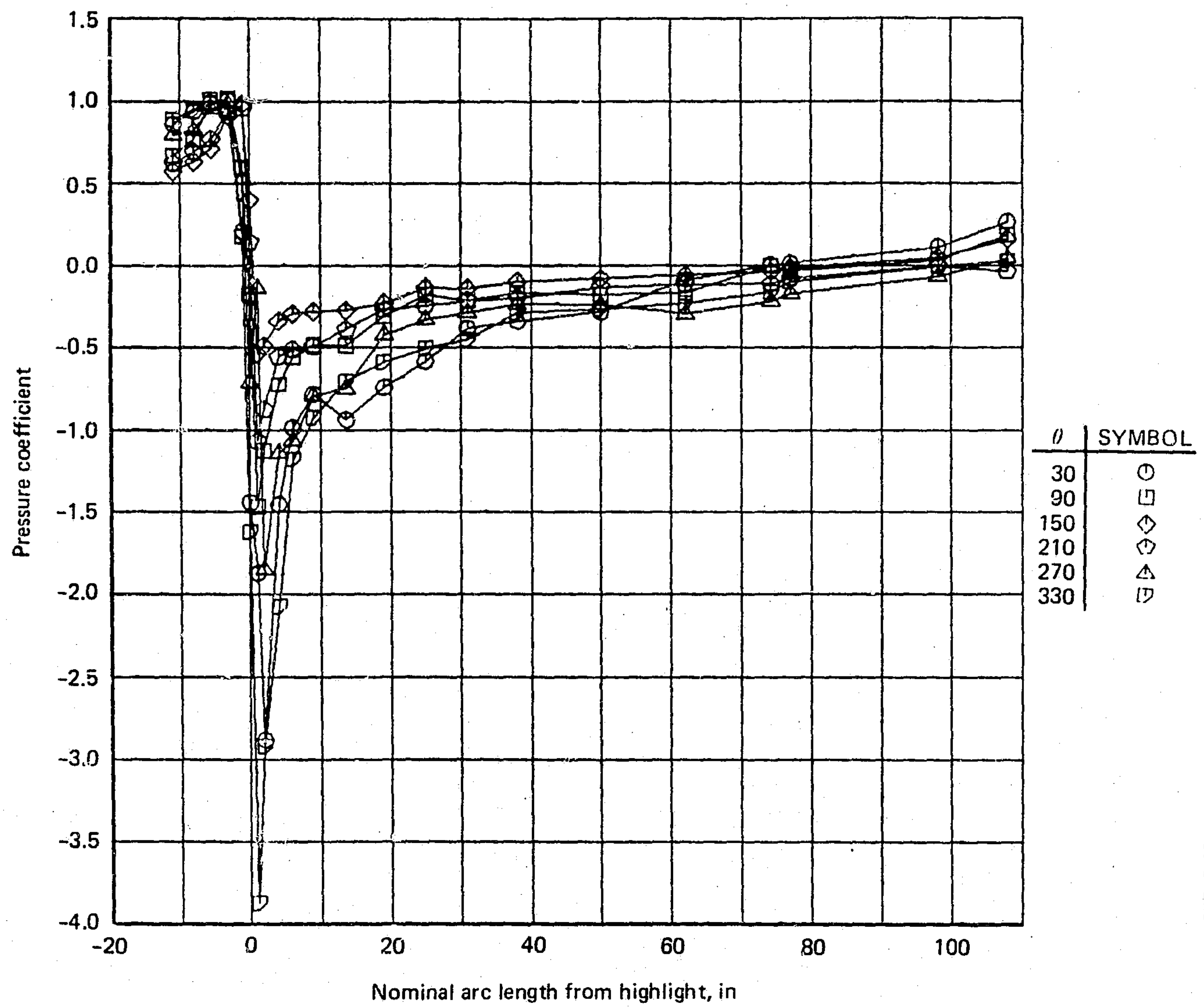


Figure A-31. Engine No. 3 Cowl Pressures, Condition 112, Idle Descent

ORIGINAL PAGE IS
OF POOR QUALITY

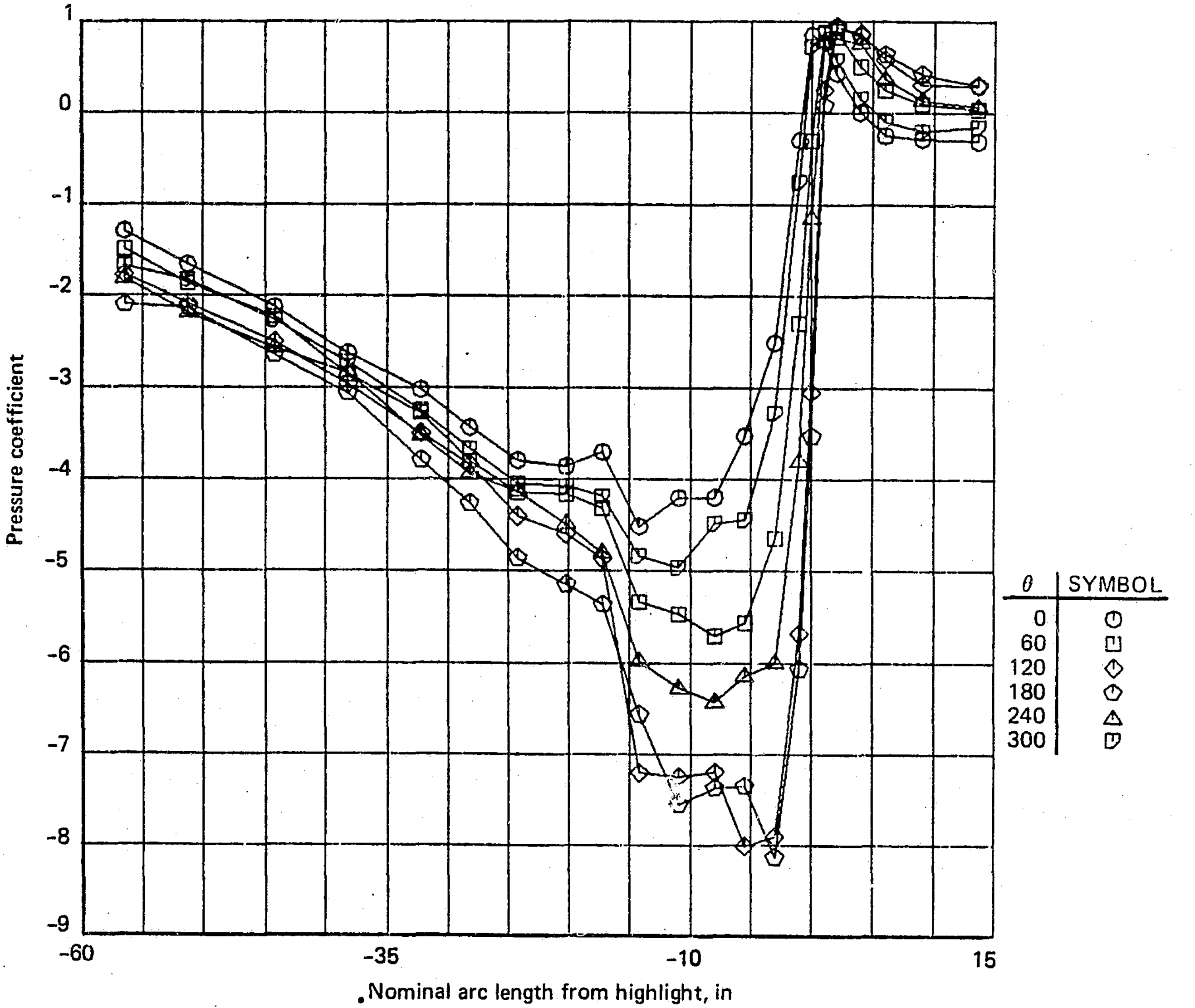


Figure A-32. Engine No. 3 Inlet Pressures, Condition 113, Approach

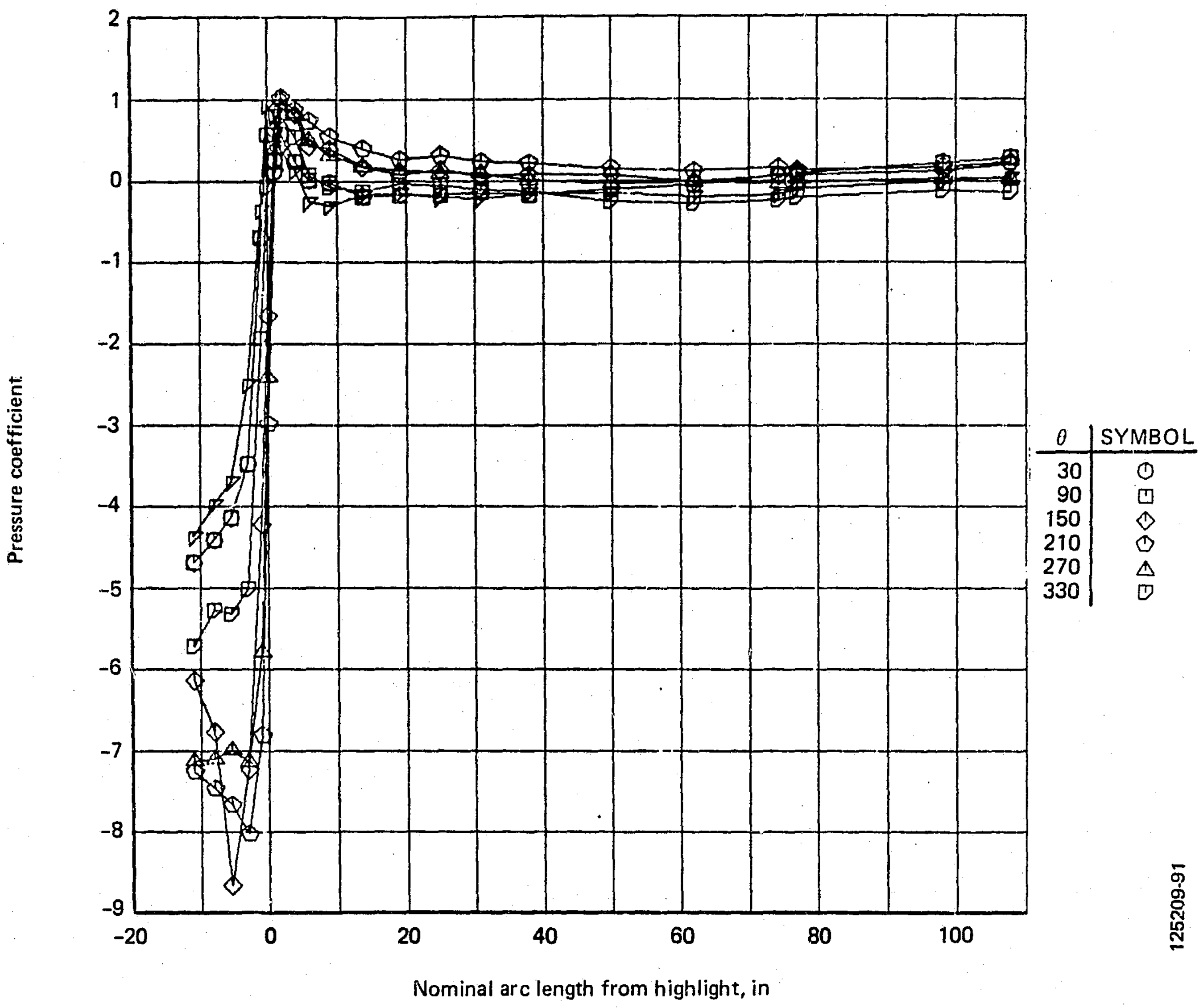


Figure A-33. Engine No. 3 Cowl Pressures, Condition 113, Approach

ORIGINAL PAGE IS
OF POOR QUALITY

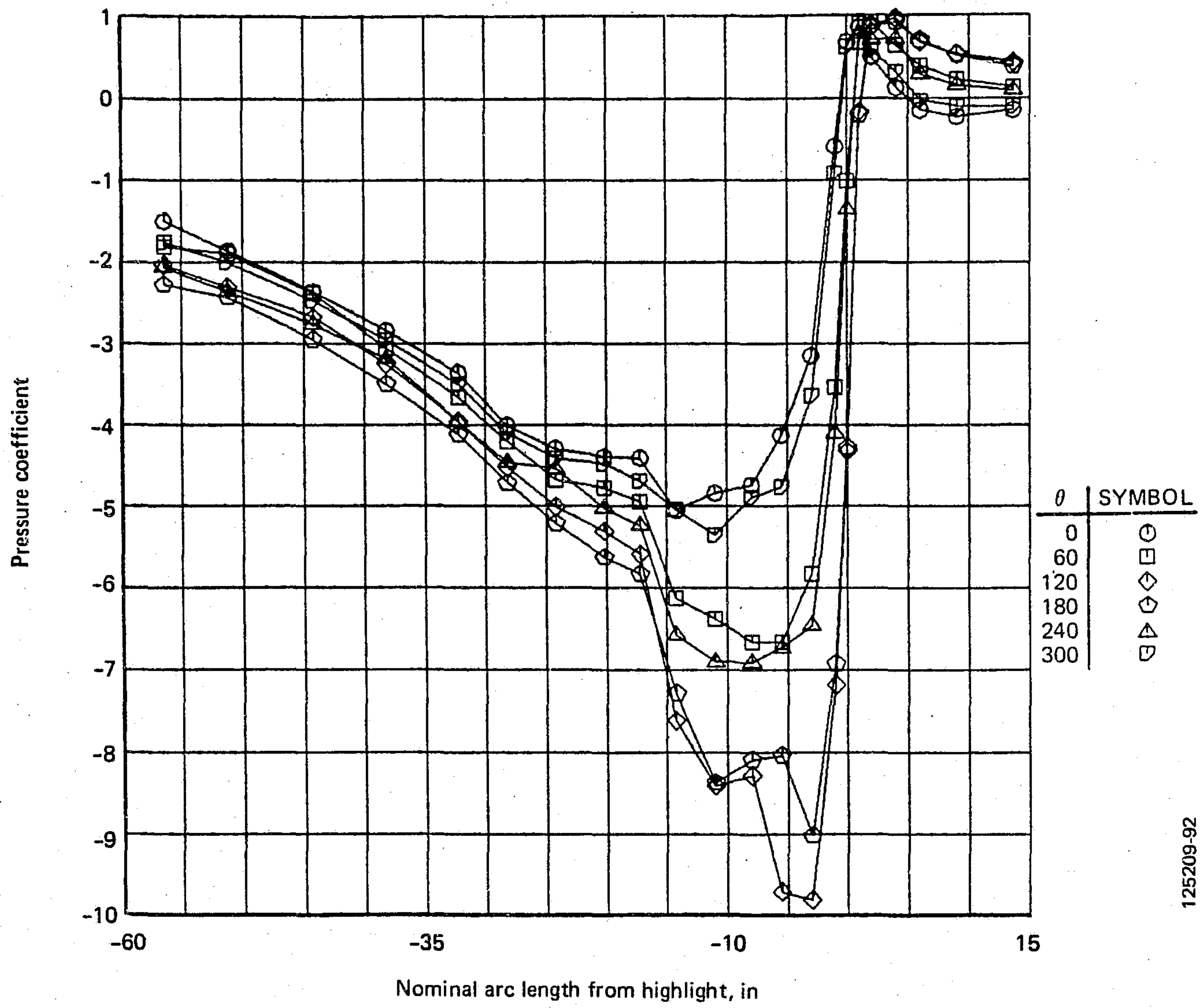


Figure A-34. Engine No. 3 Inlet Pressures, Condition 114, Touch and Go

ORIGINAL PAGE IS
OF POOR QUALITY

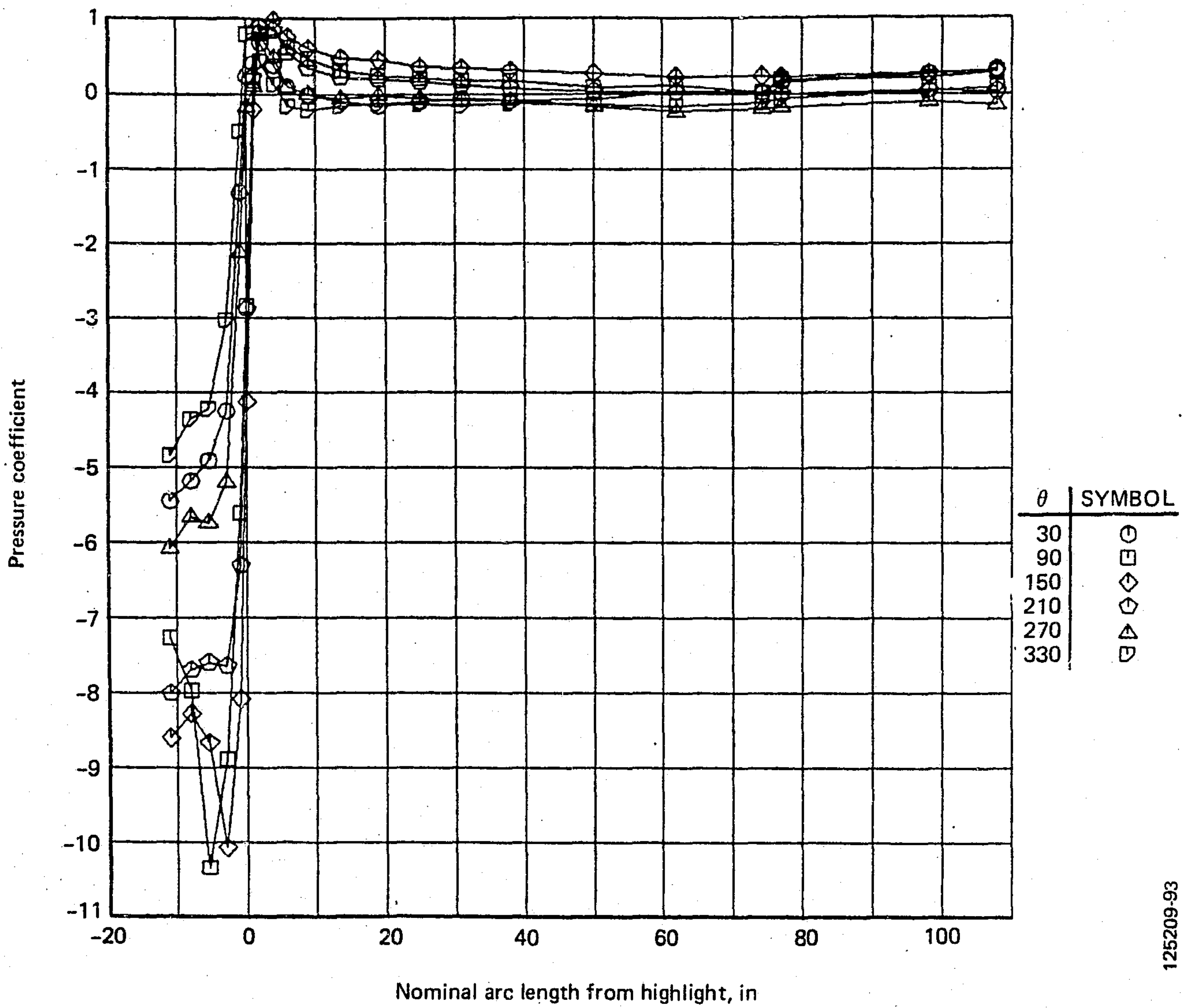


Figure A-35. Engine No. 3 Cowl Pressures, Condition 114, Touch and Go

ORIGINAL PAGE IS
OF POOR QUALITY

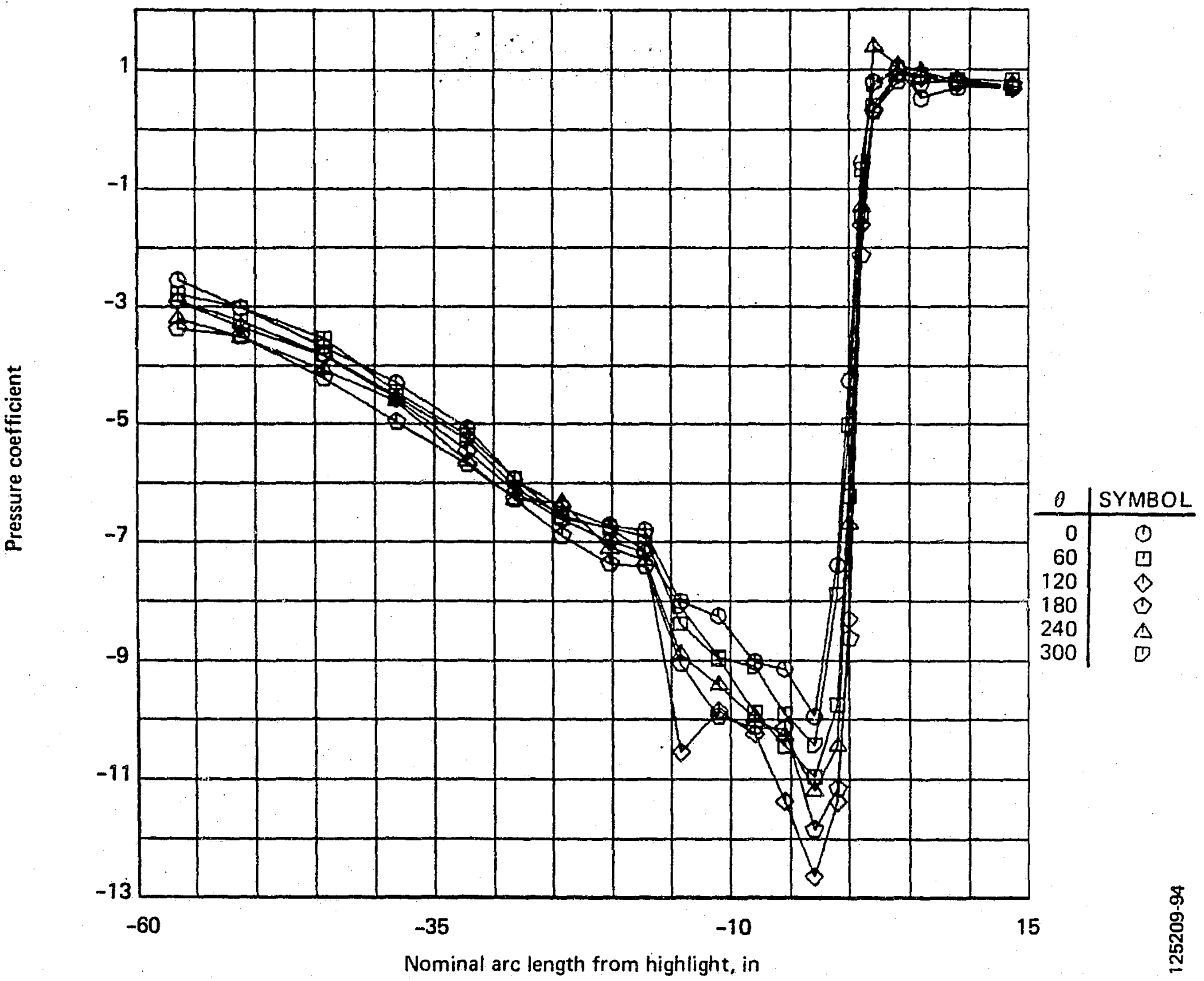


Figure A-36. Engine No. 3 Inlet Pressures, Condition 115, Thrust Reverse

ORIGINAL PAGE IS
OF POOR QUALITY

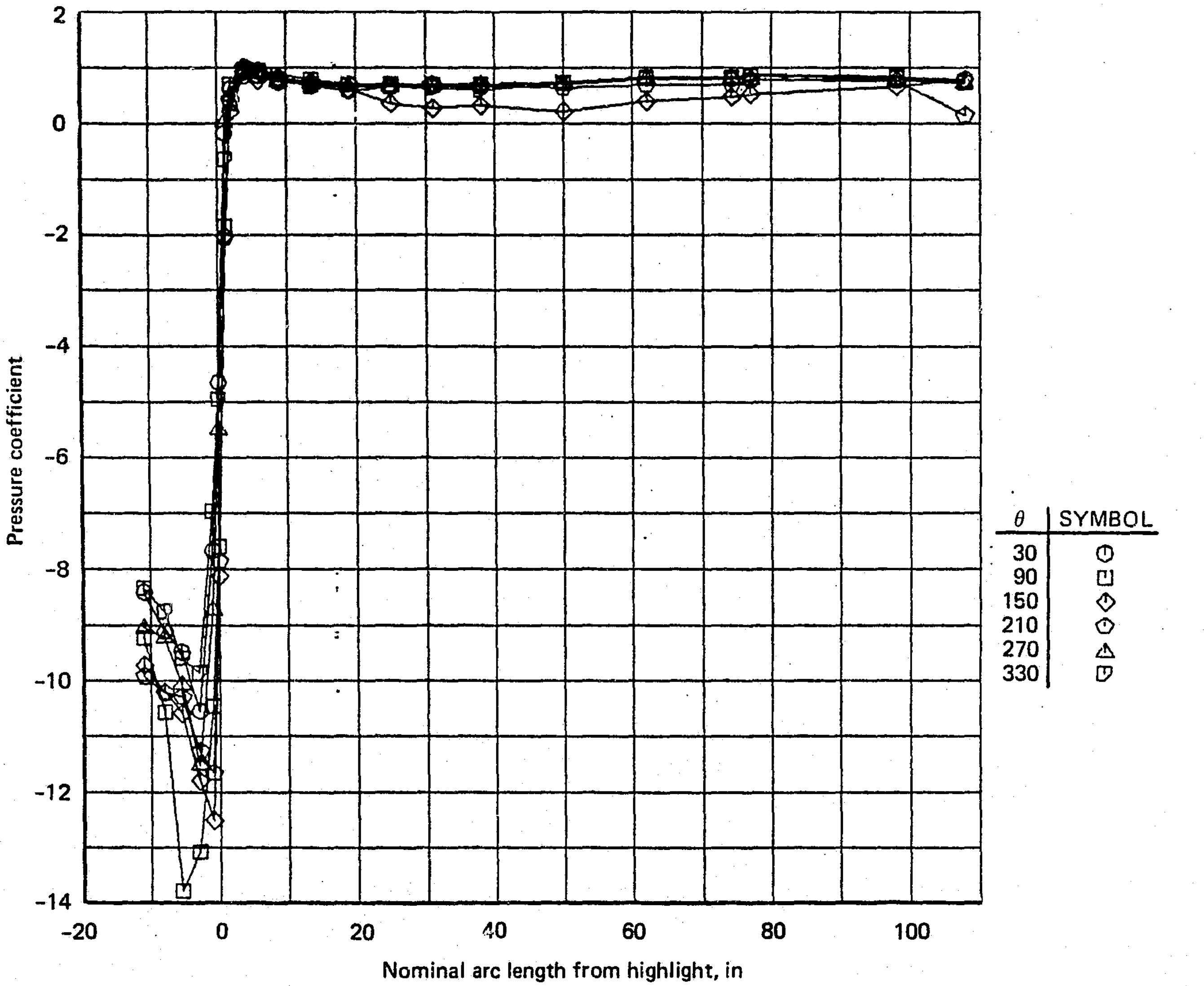


Figure A-37. Engine No. 3 Cowl Pressures, Condition 115, Thrust Reverse

ORIGINAL PAGE IS
OF POOR QUALITY

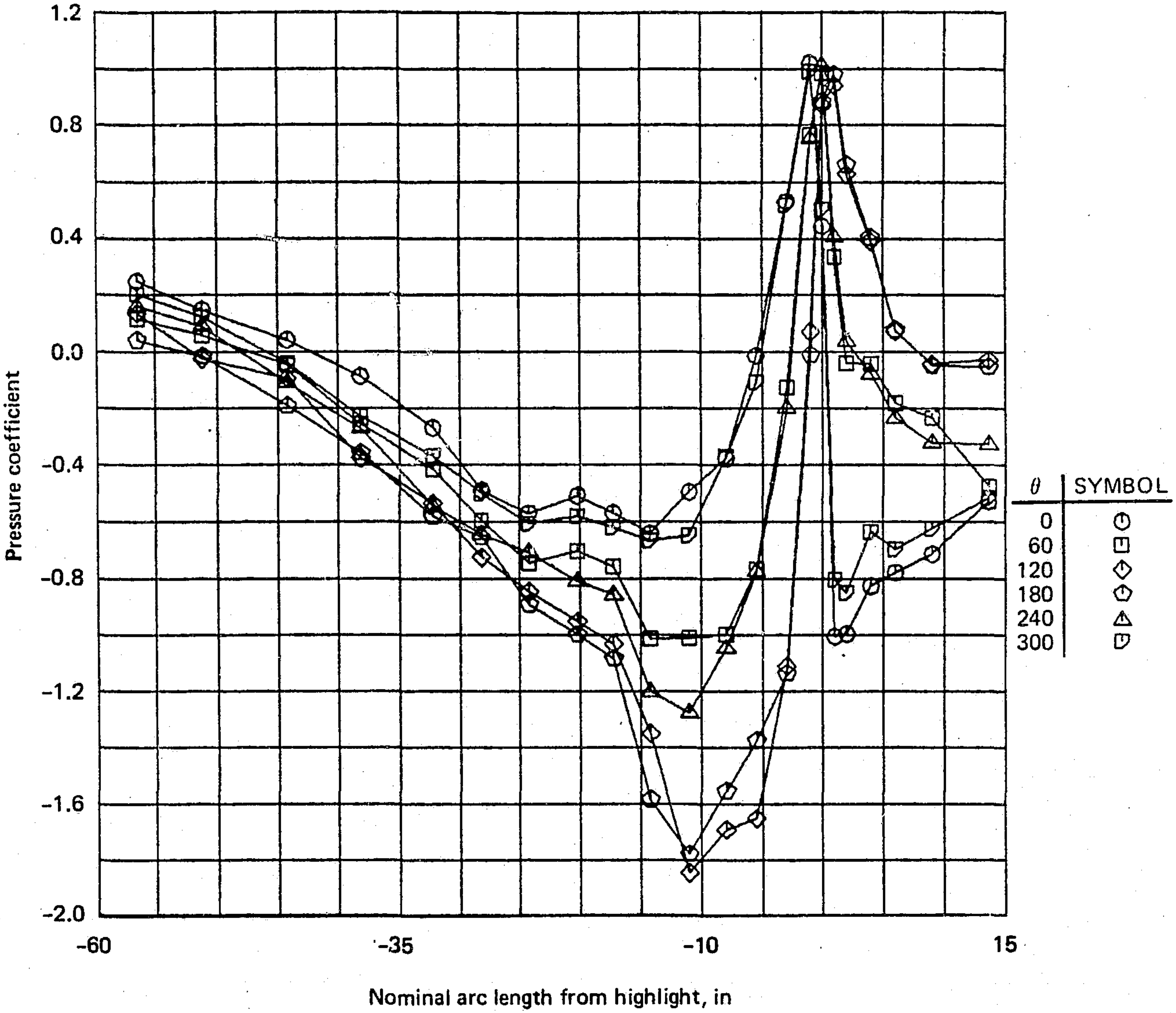


Figure A-38. Engine No. 3 Inlet Pressures, Condition 116, 2.0g Left Turn (Flaps Up)

125209-96

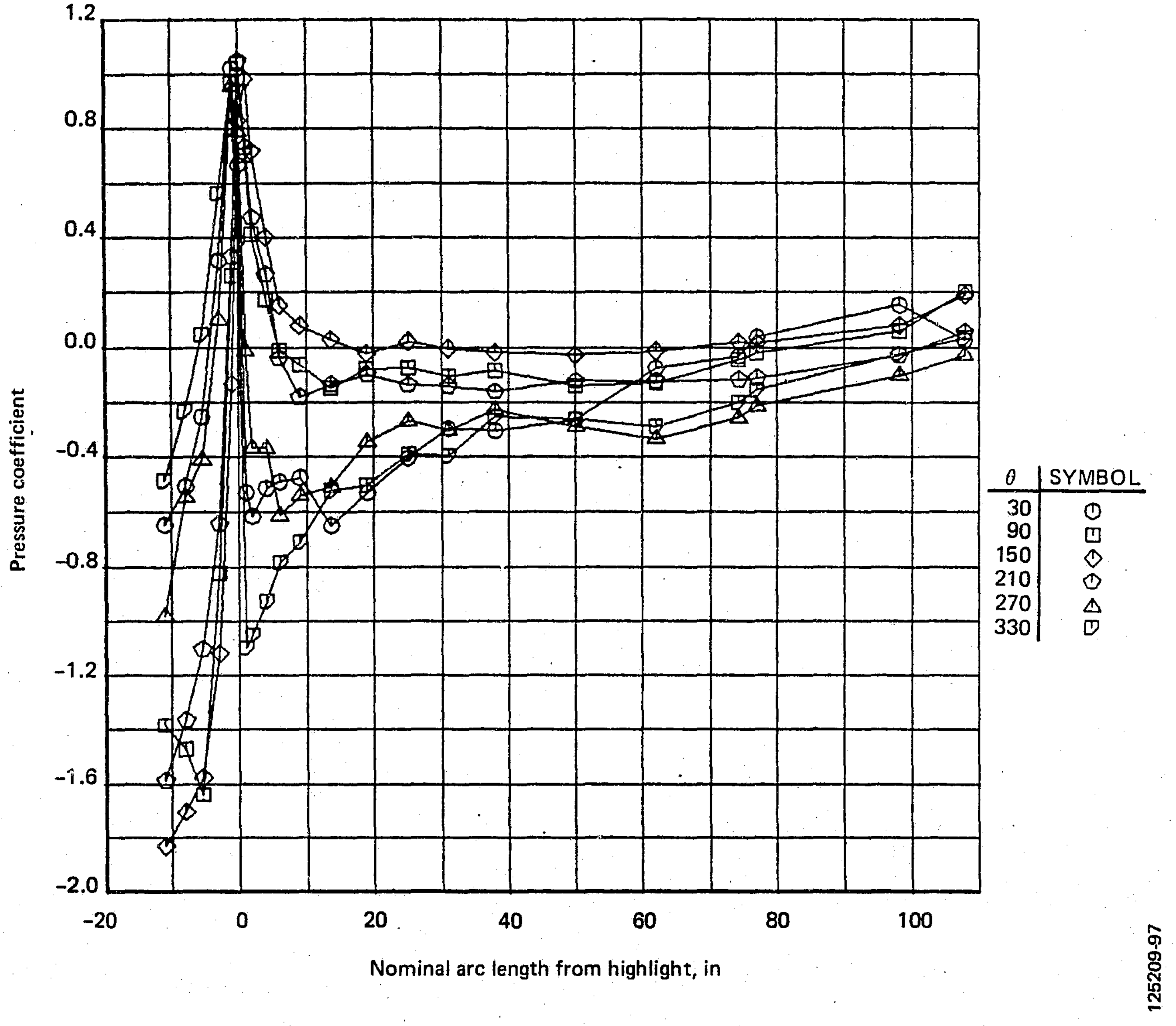


Figure A-39. Engine No. 3 Cowl Pressures, Condition 116, 2.0g Left Turn (Flaps Up)

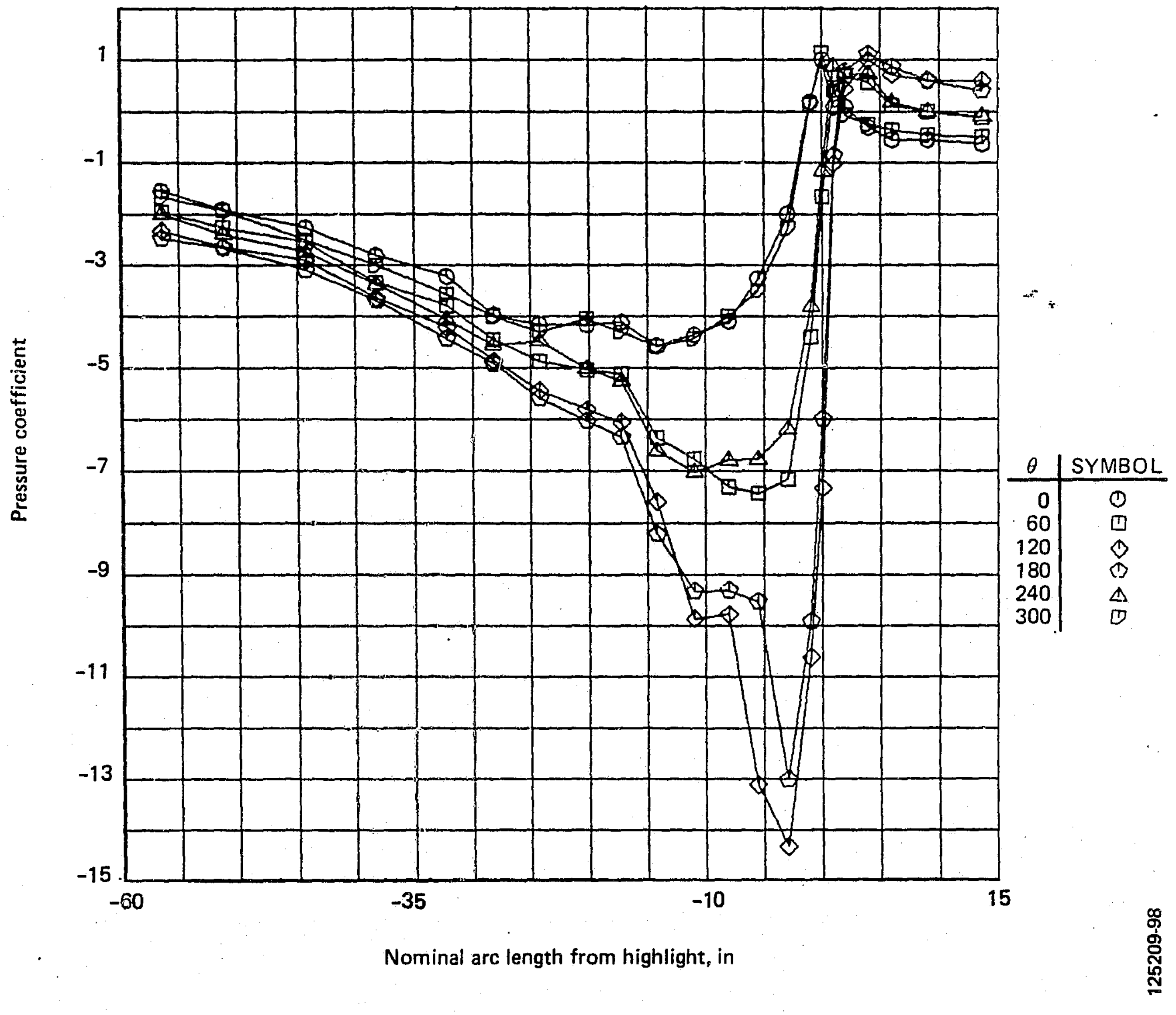


Figure A-40. Engine No. 3 Inlet Pressures, Condition 117, 1.6g Left Turn (Flaps 30)

ORIGINAL PAGE IS
OF POOR QUALITY

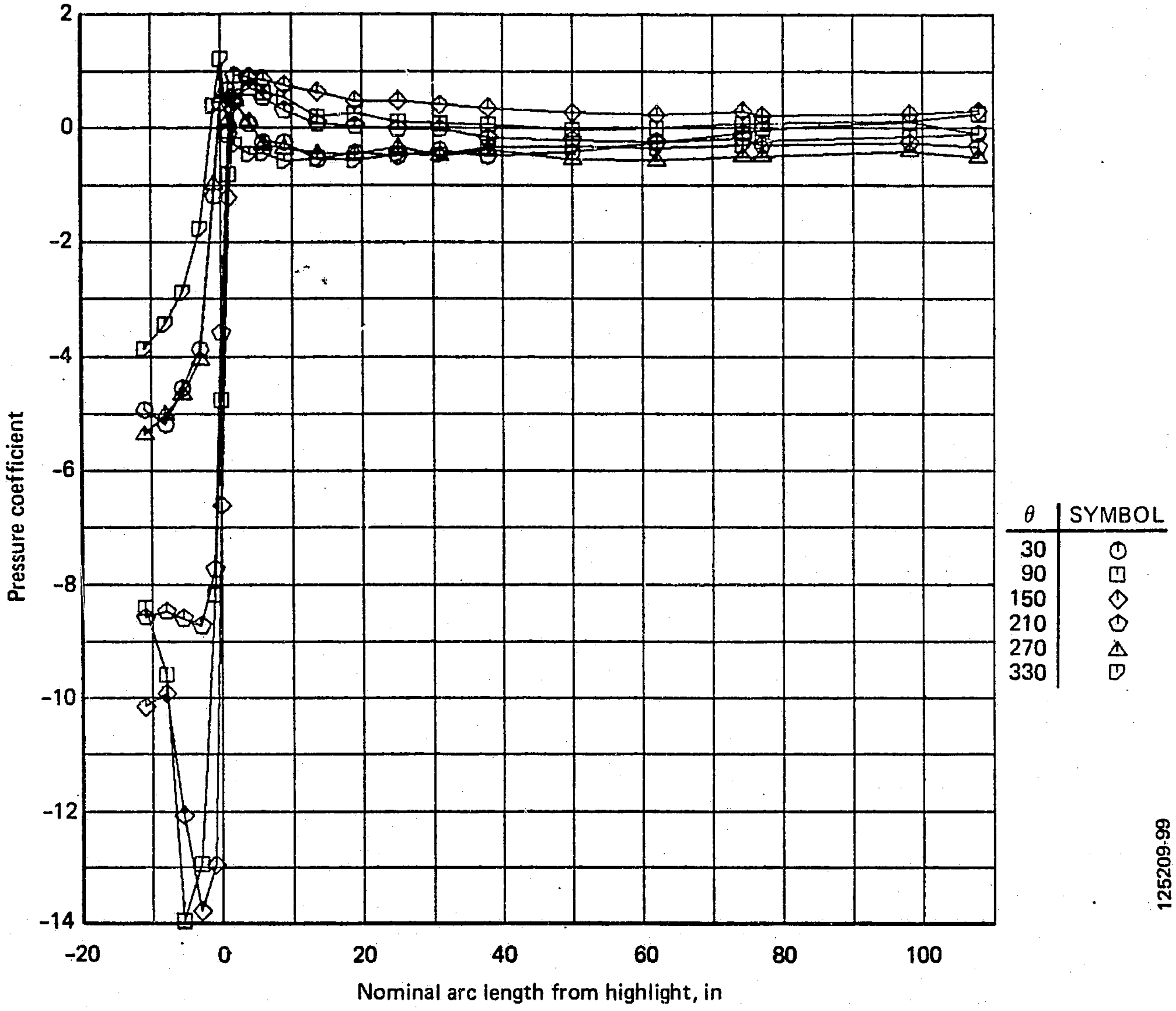


Figure A-41. Engine No. 3 Cowl Pressures, Condition 117, 1.6g Left Turn (Flaps 30)

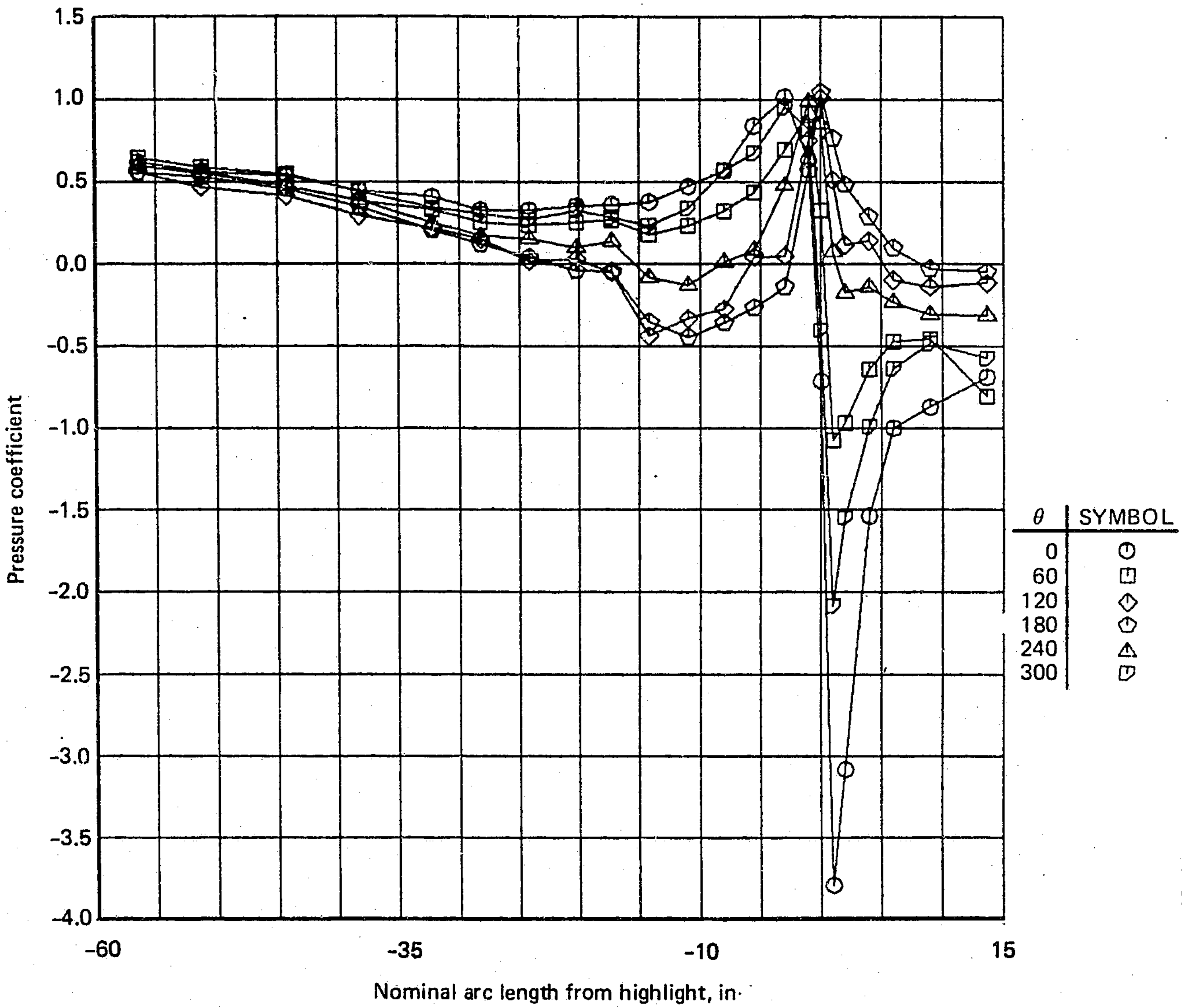


Figure A-42. Engine No. 3 Inlet Pressures, Condition 120, 2.0g Right Turn (Flaps Up)

ORIGINAL PAGE IS
OF POOR QUALITY

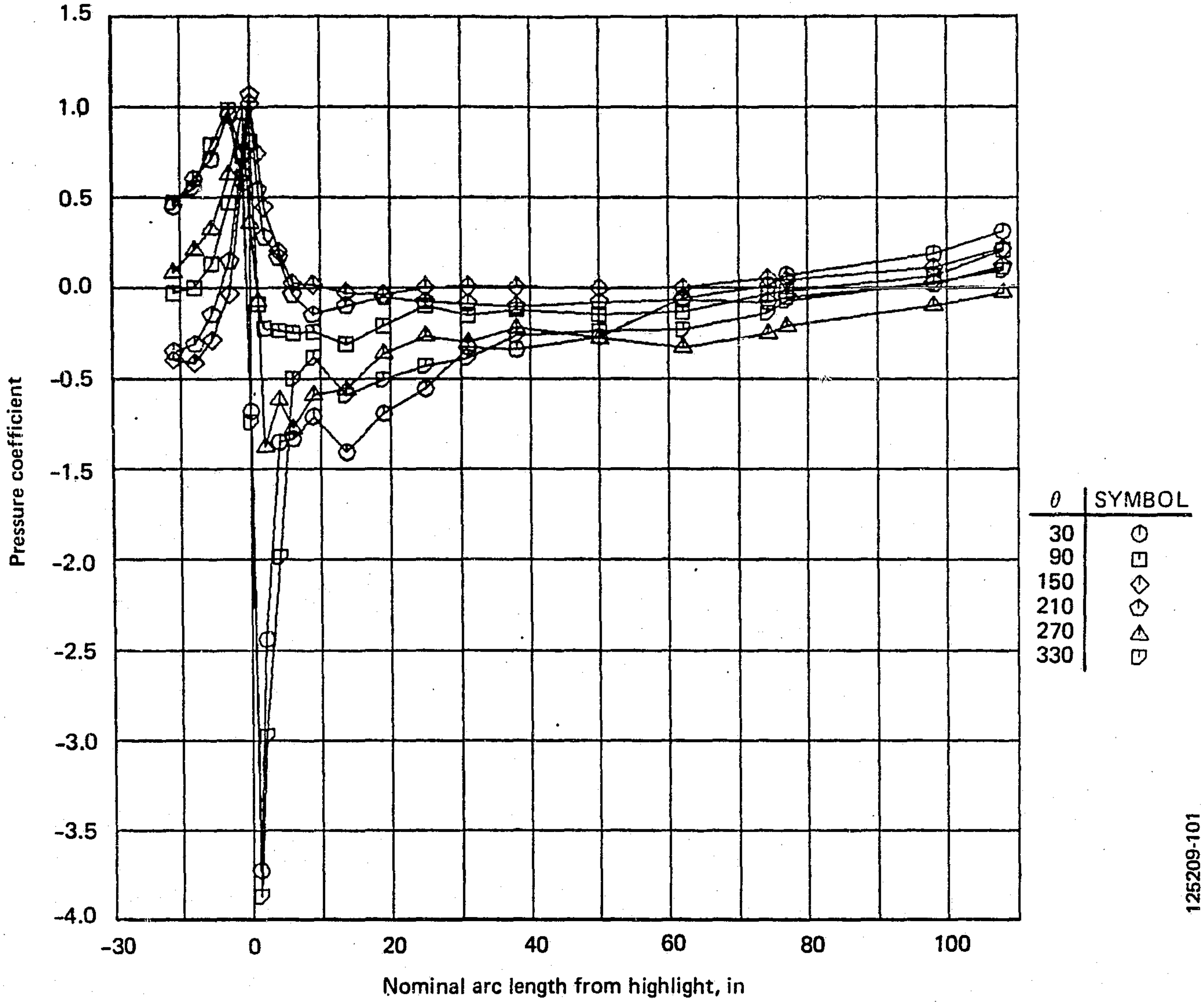


Figure A-43. Engine No. 3 Cowl Pressures, Condition 120, 2.0g Right Turn (Flaps Up)

ORIGINAL PAGE IS
OF POOR QUALITY

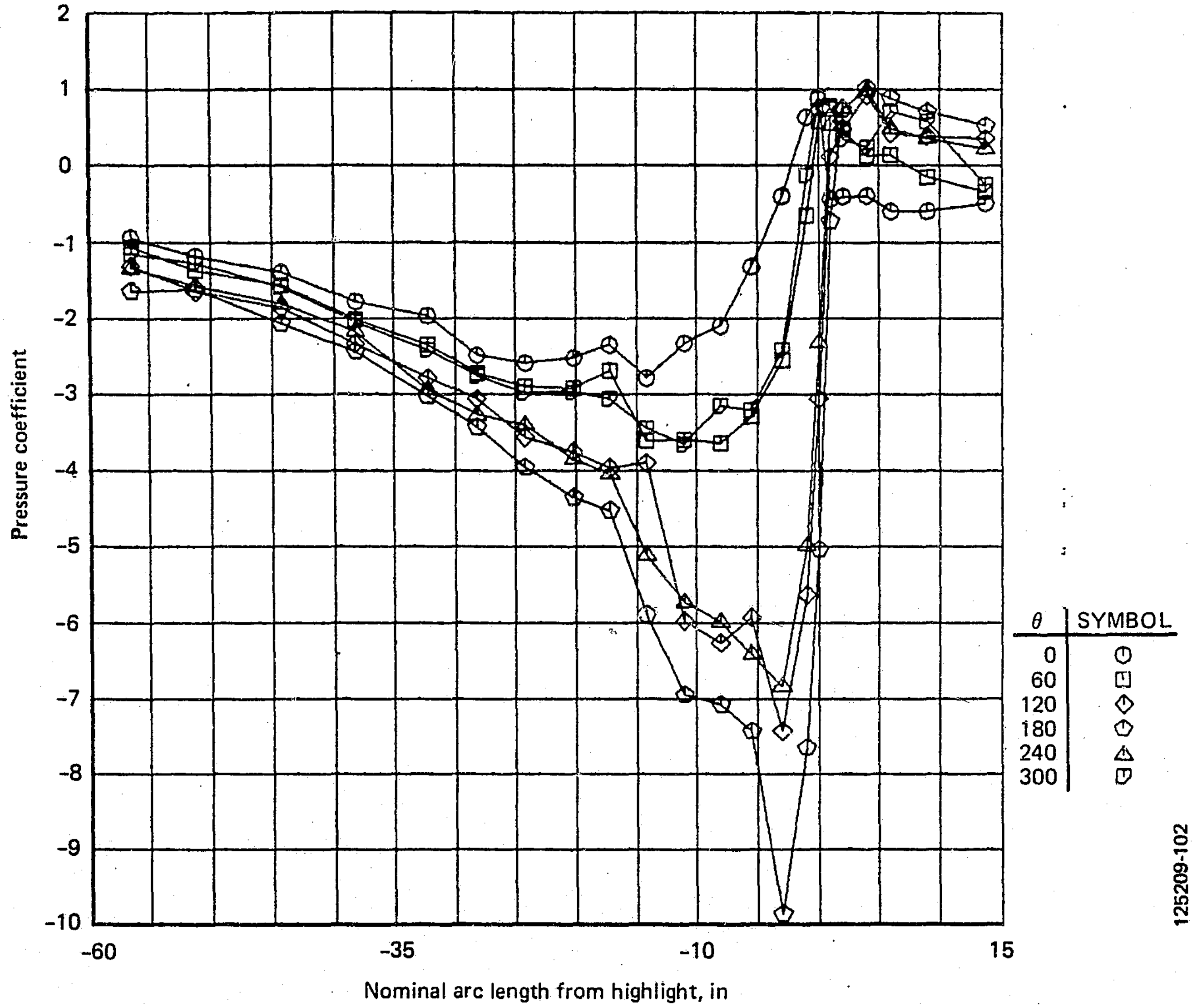


Figure A-44. Engine No. 3 Inlet Pressures, Condition 121, 1.6g Right Turn (Flaps 30)

ORIGINAL PAGE IS
OF POOR QUALITY

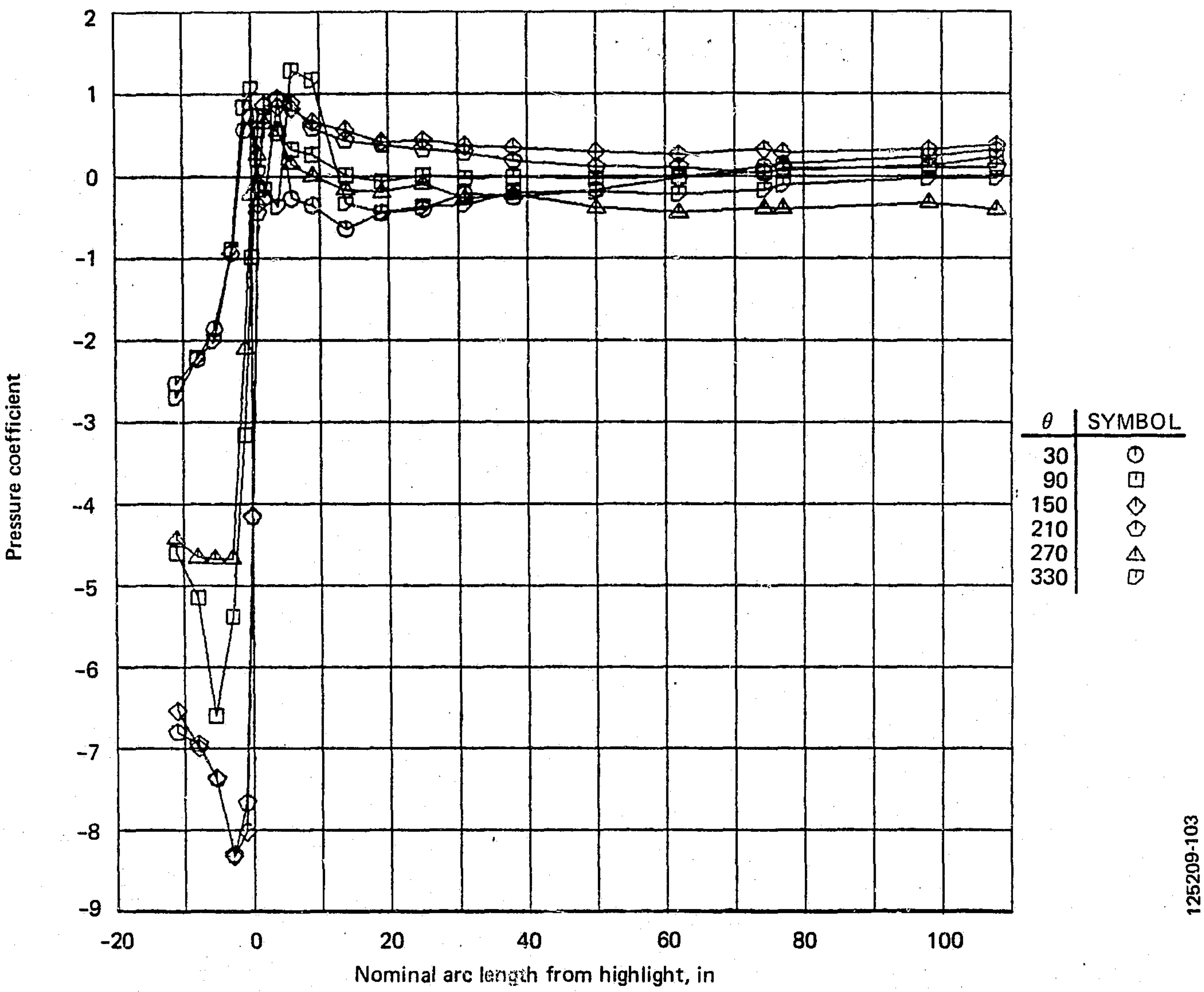


Figure A-45. Engine No. 3 Cowl Pressures, Condition 121, 1.6g Right Turn (Flaps 30)

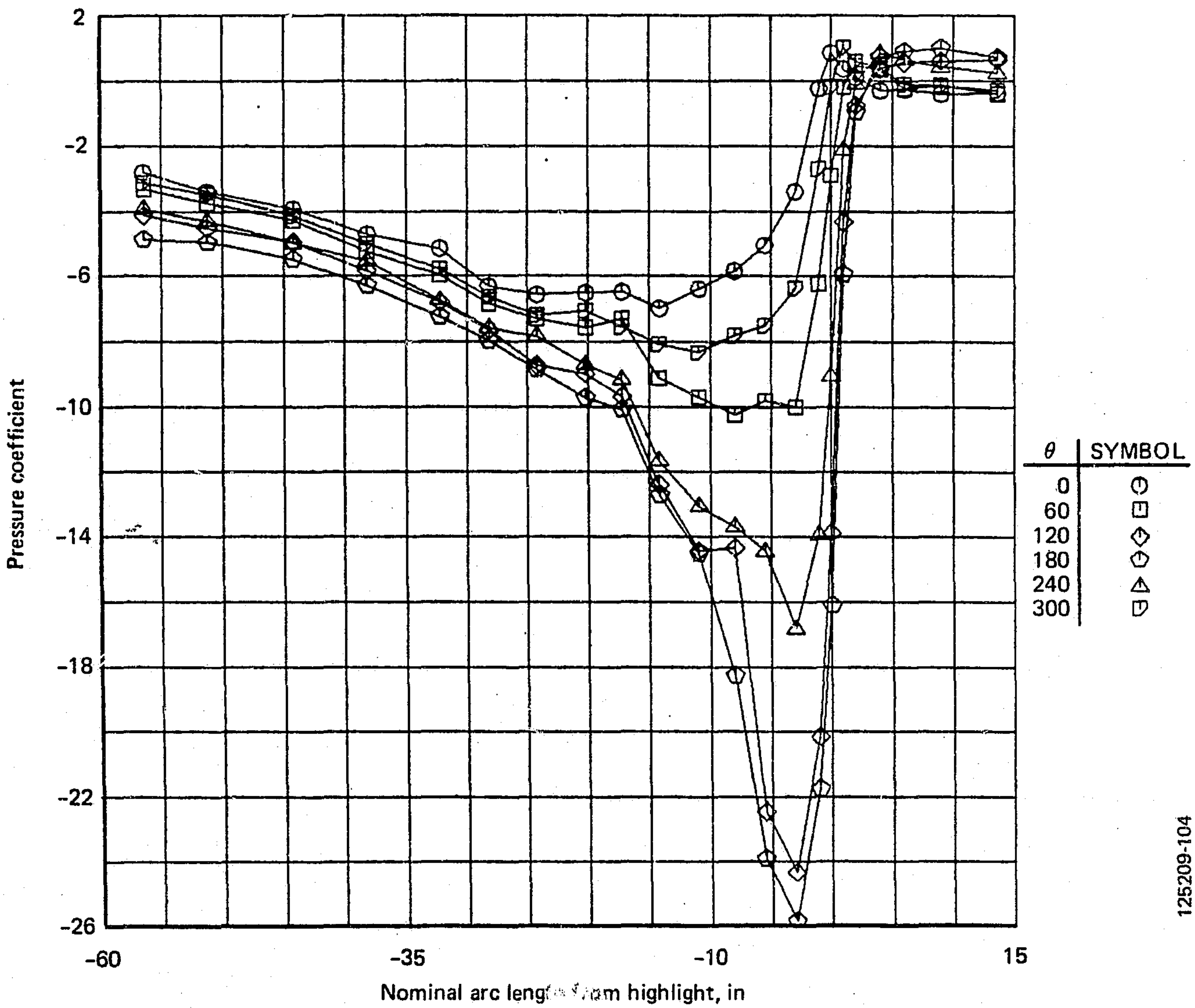


Figure A-46. Engine No. 3 Inlet Pr[illegible]ures, Condition 123, Airplane Stall

ORIGINAL PAGE IS
OF POOR QUALITY

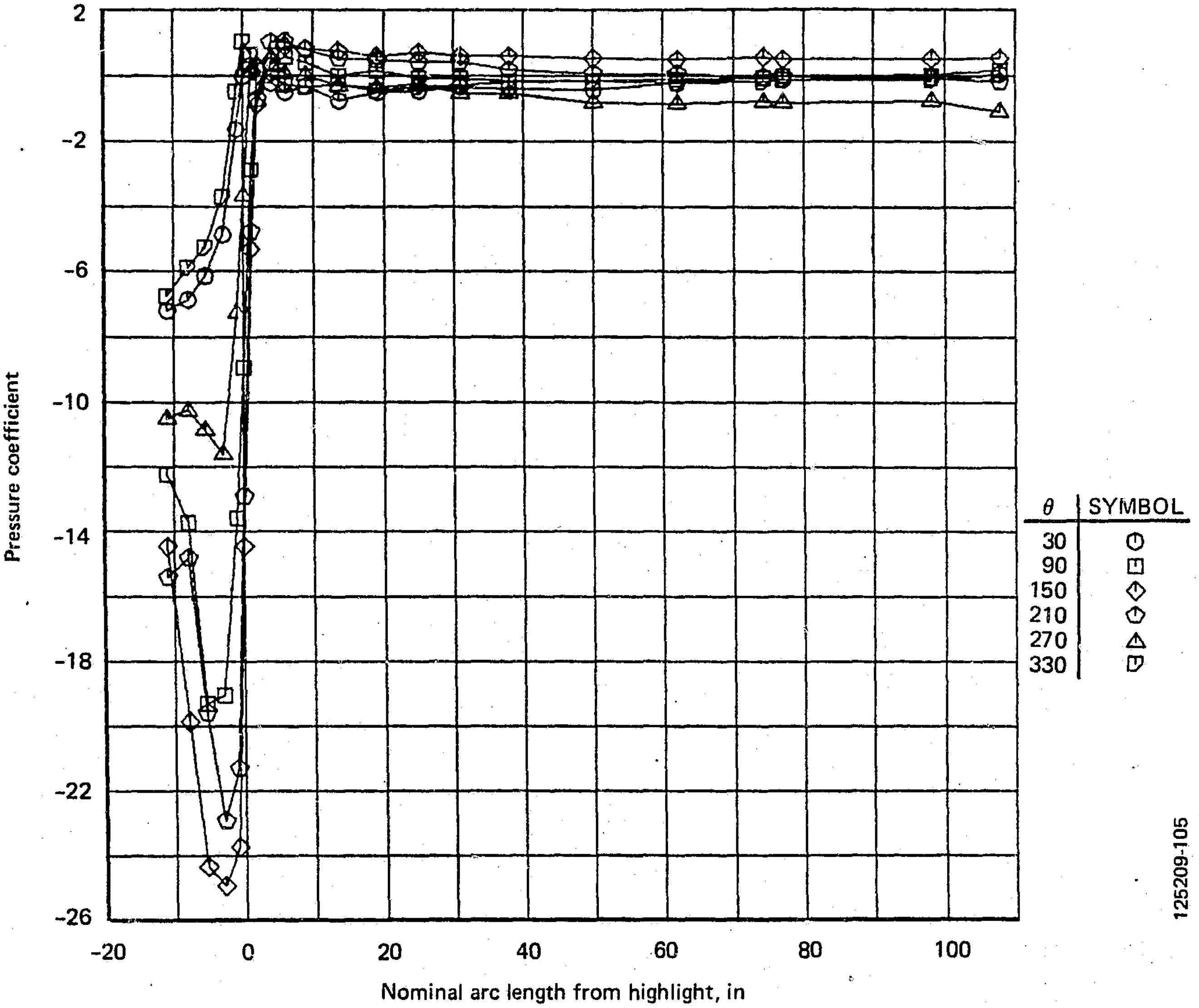


Figure A-47. Engine No. 3 Cowl Pressures, Condition 123, Airplane Stall

ORIGINAL PAGE IS
OF POOR QUALITY

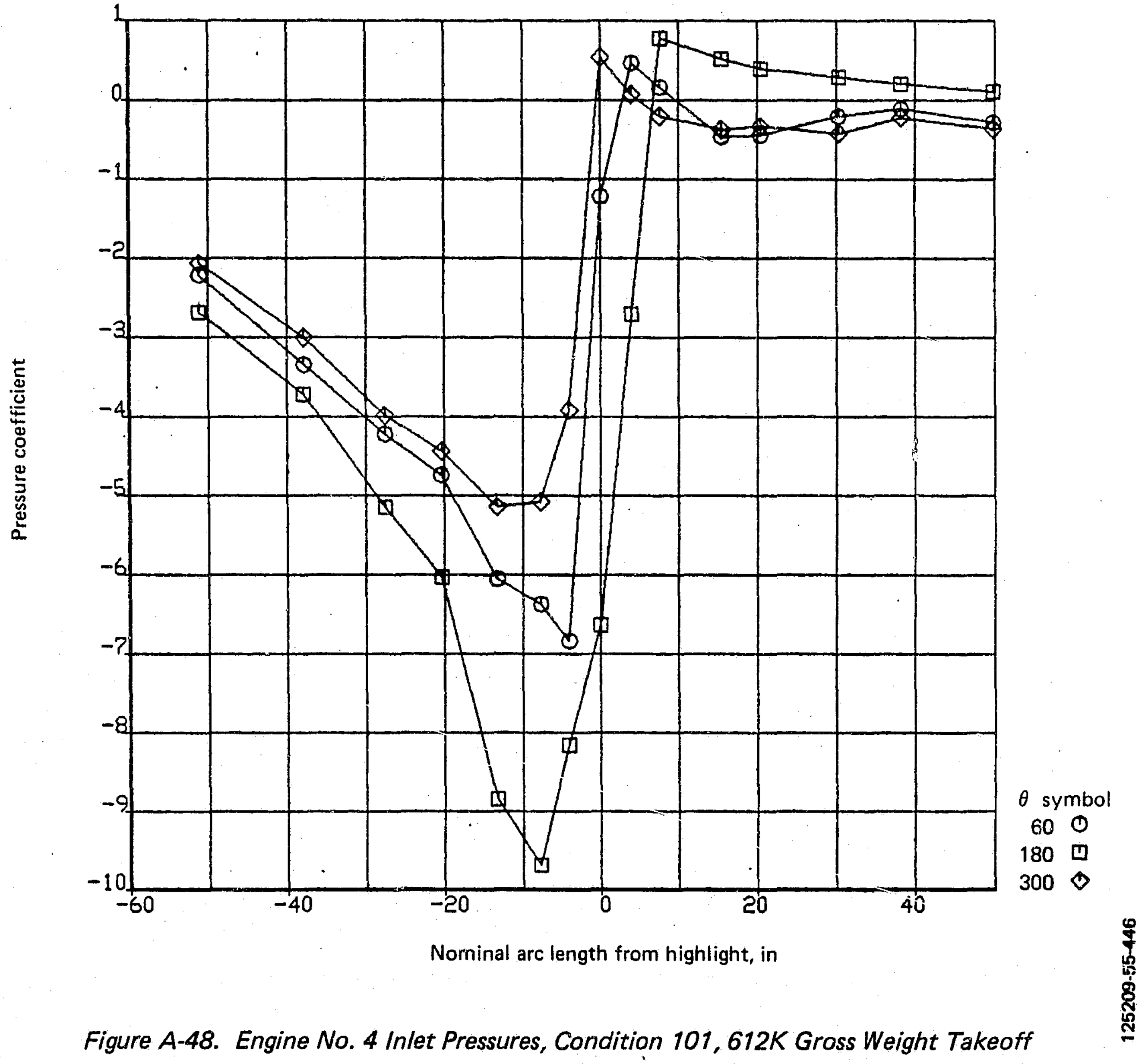
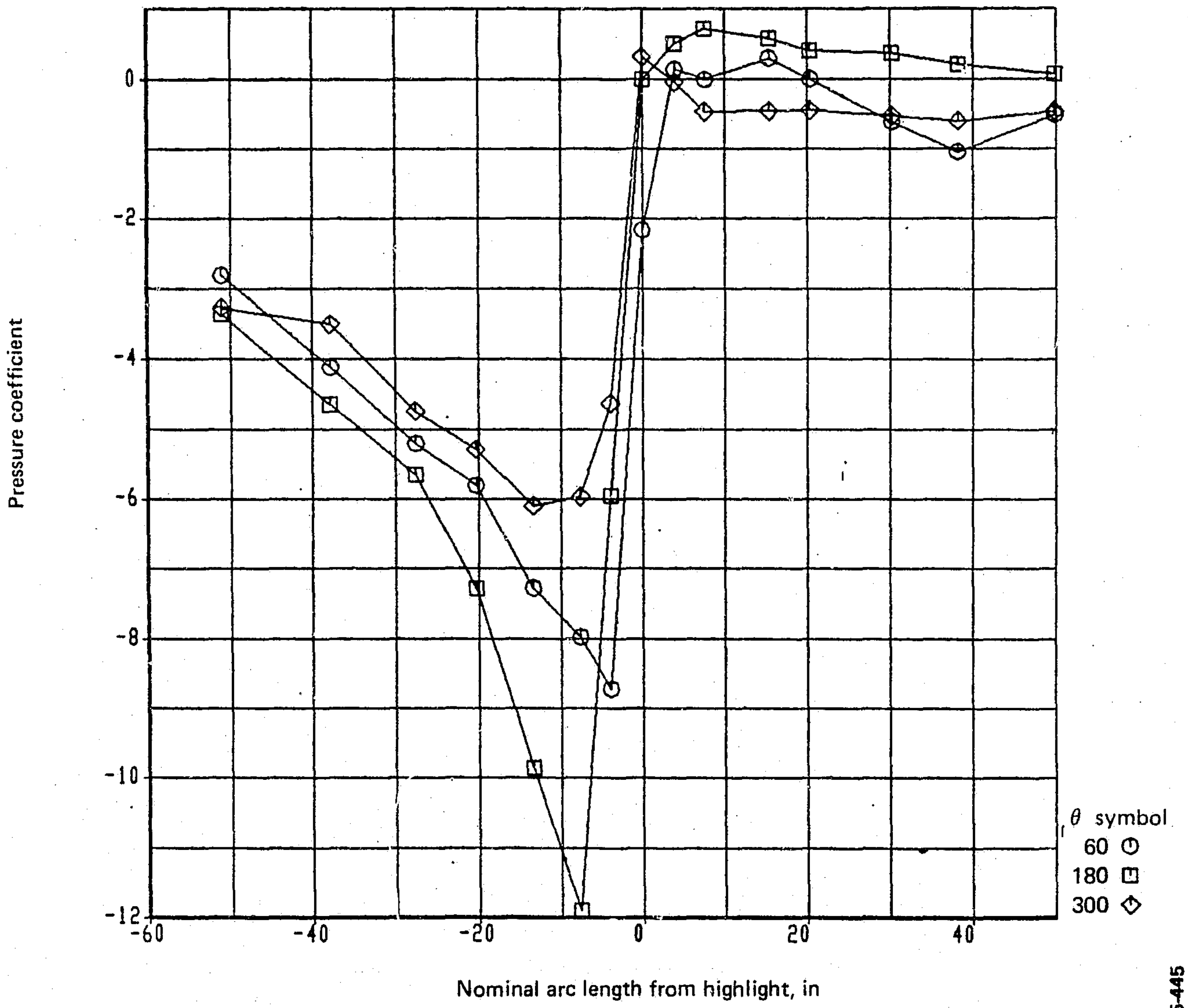


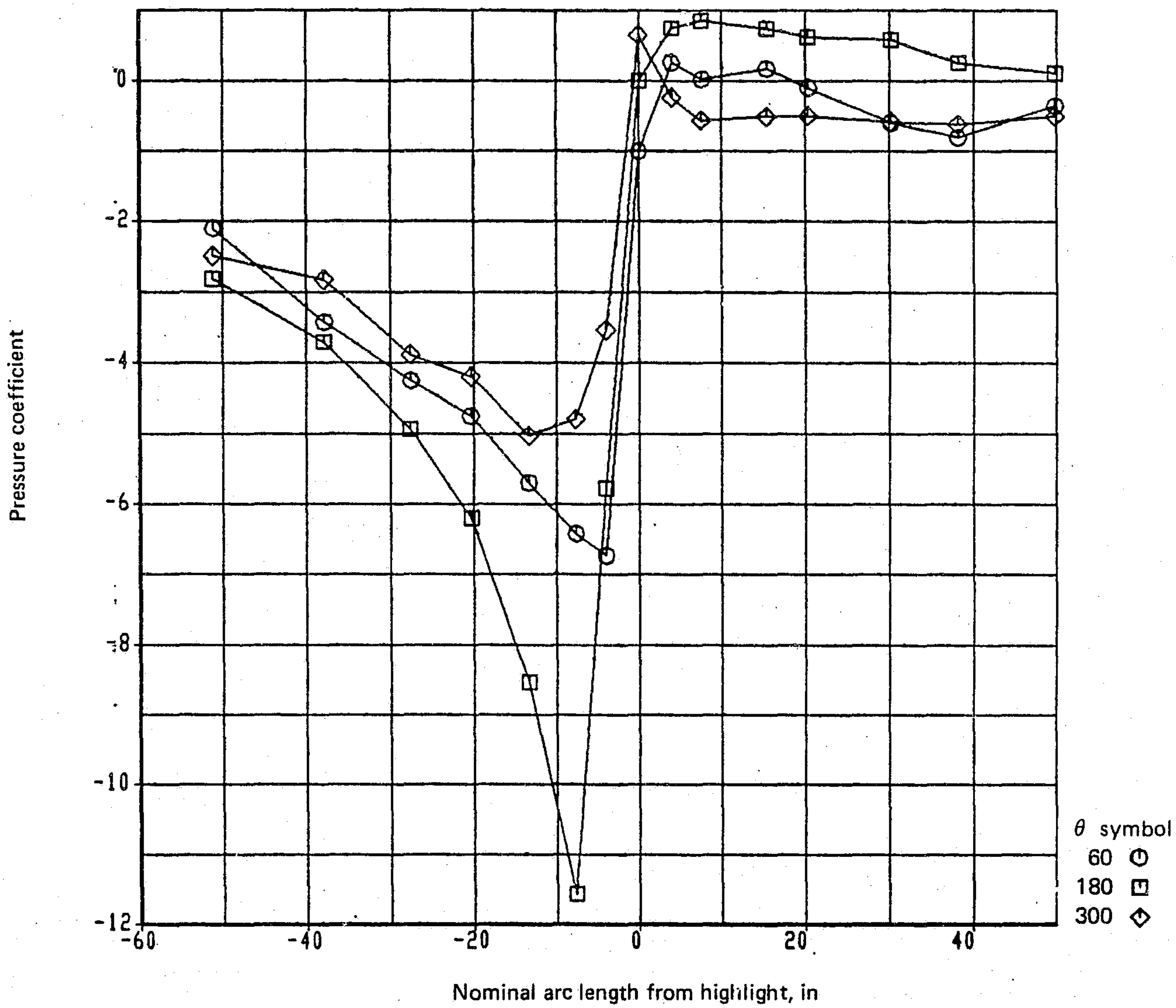
Figure A-48. Engine No. 4 Inlet Pressures, Condition 101, 612K Gross Weight Takeoff



125209-55-445

Figure A-49. Engine No. 4 Inlet Pressures, Condition 101, 538K Gross Weight Takeoff

ORIGINAL PAGE IS
OF POOR QUALITY



125209-55-444

Figure A-50. Engine No. 4 Inlet Pressures, Condition 101, 647K Gross Weight Takeoff

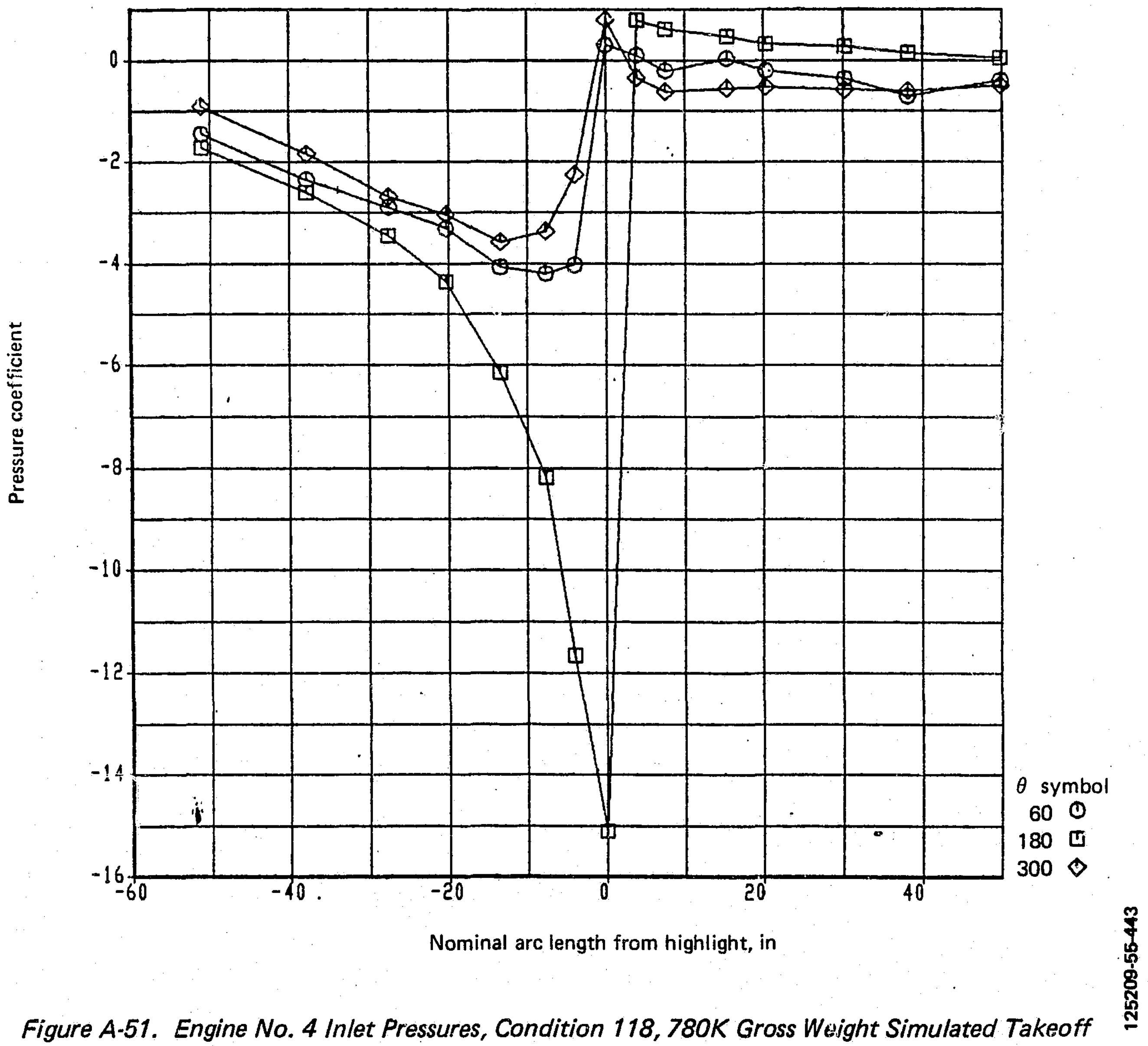


Figure A-51. Engine No. 4 Inlet Pressures, Condition 118, 780K Gross Weight Simulated Takeoff

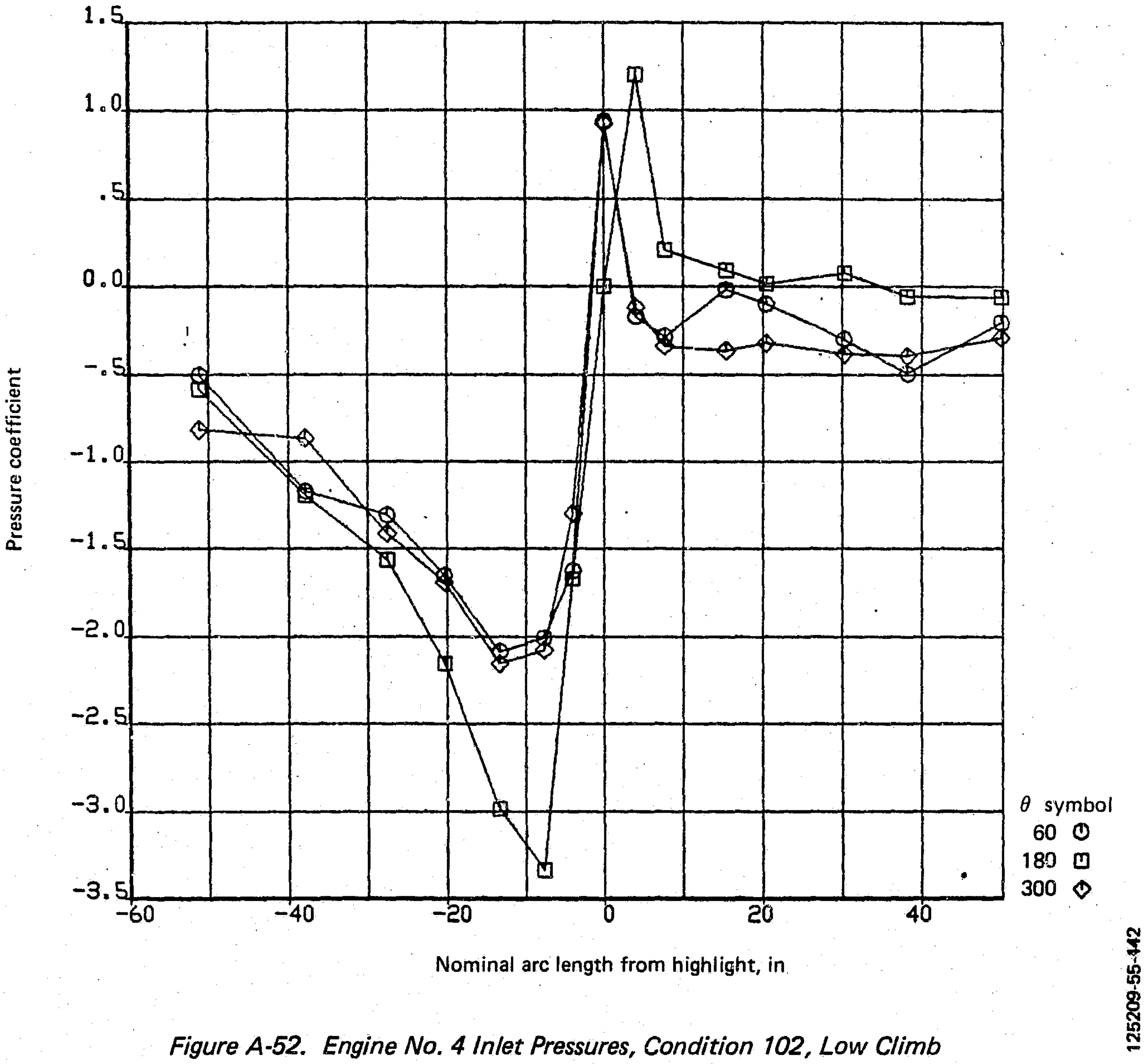


Figure A-52. Engine No. 4 Inlet Pressures, Condition 102, Low Climb

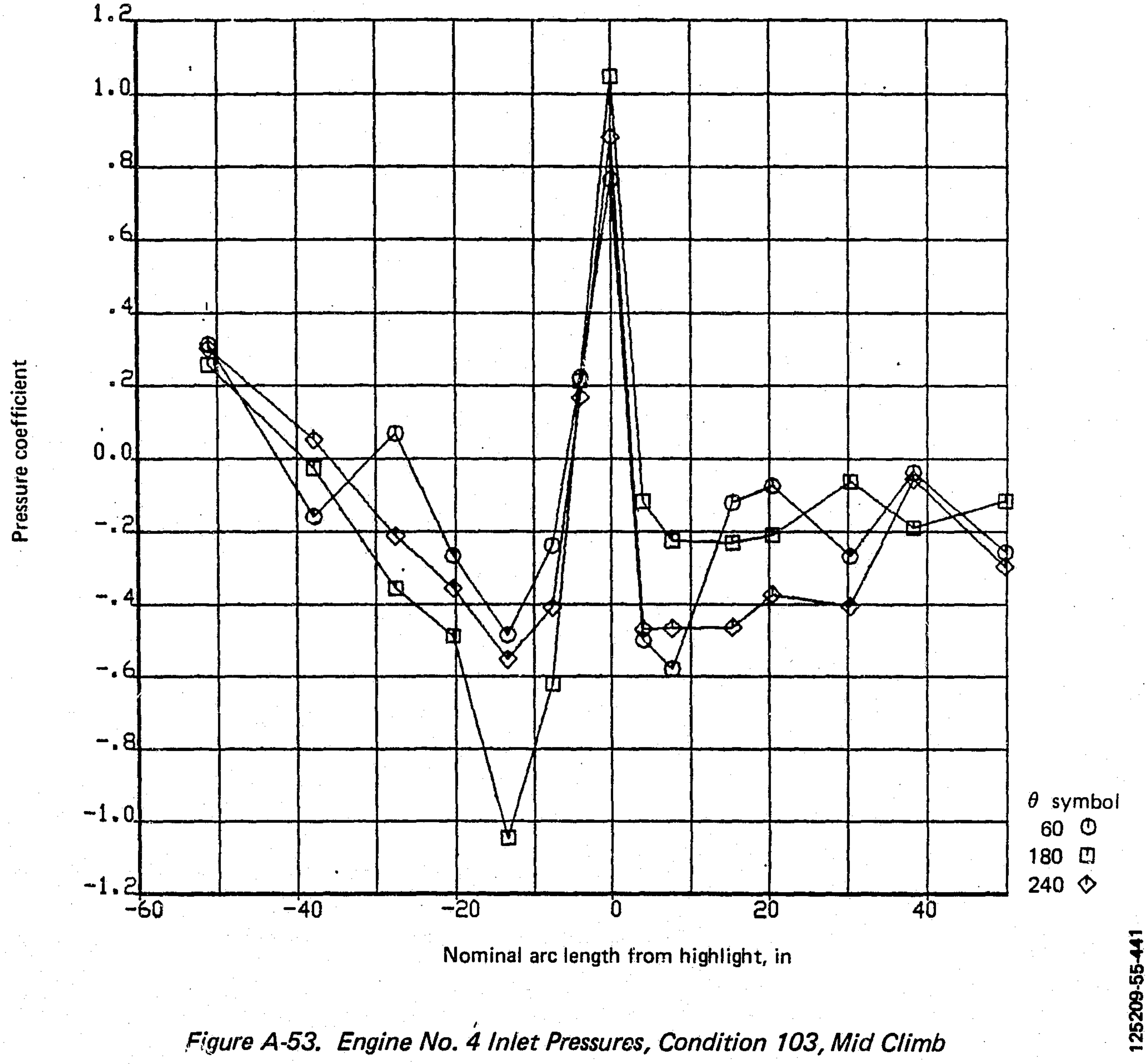


Figure A-53. Engine No. 4 Inlet Pressures, Condition 103, Mid Climb

ORIGINAL PAGE IS
OF POOR QUALITY

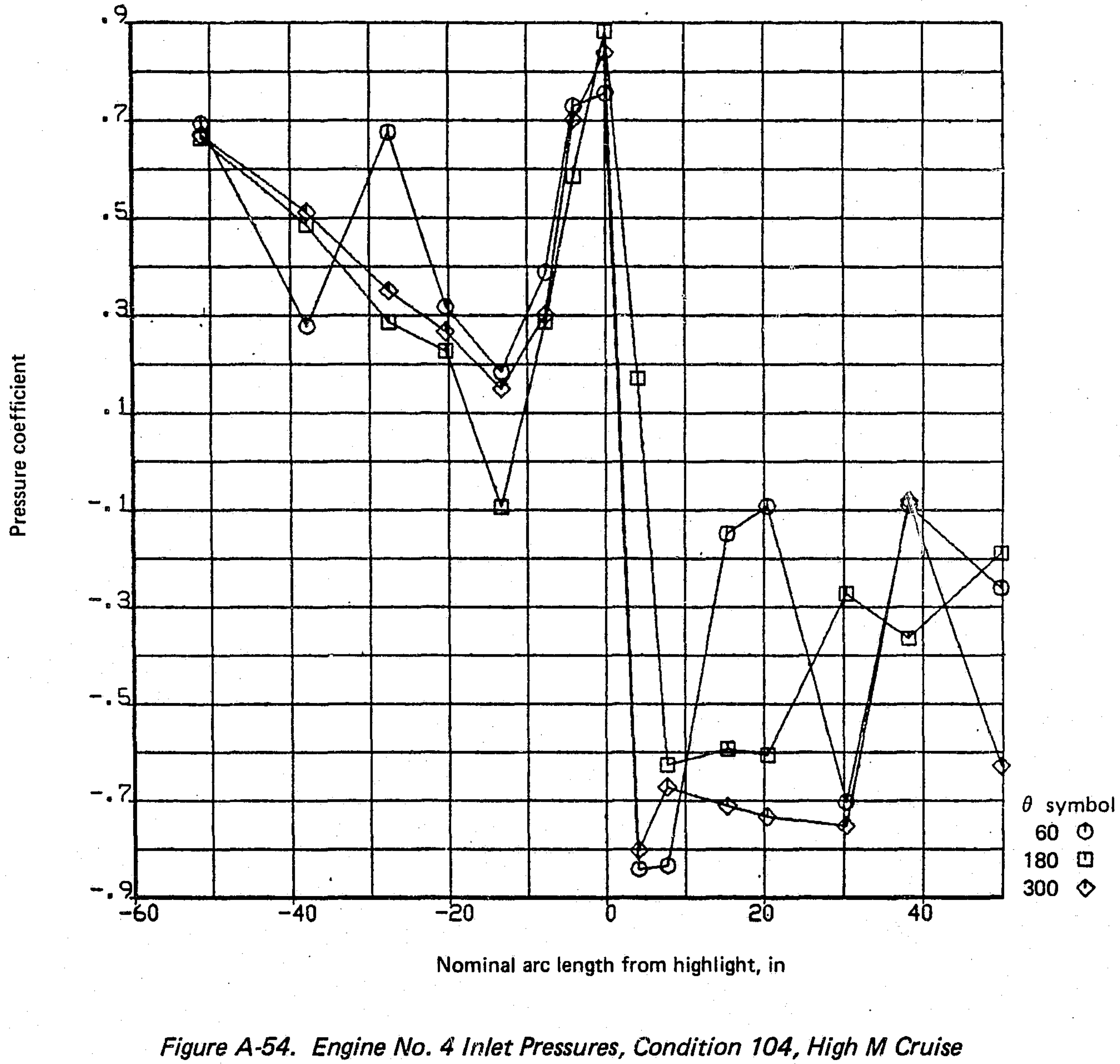


Figure A-54. Engine No. 4 Inlet Pressures, Condition 104, High M Cruise

ORIGINAL PAGE IS
OF POOR QUALITY

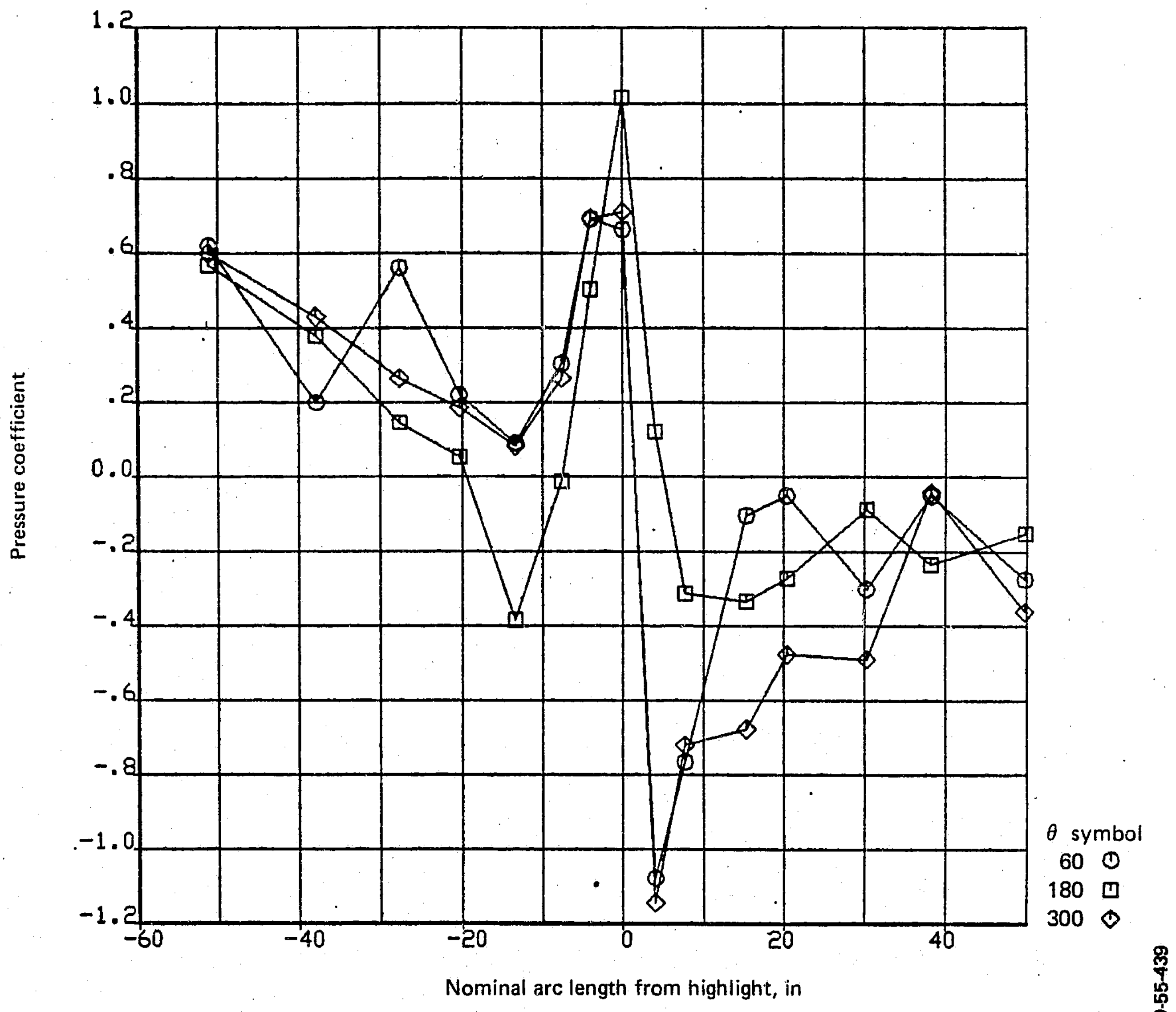


Figure A-55. Engine No. 4 Inlet Pressures, Condition 105, Low M Cruise

ORIGINAL PAGE IS
OF POOR QUALITY

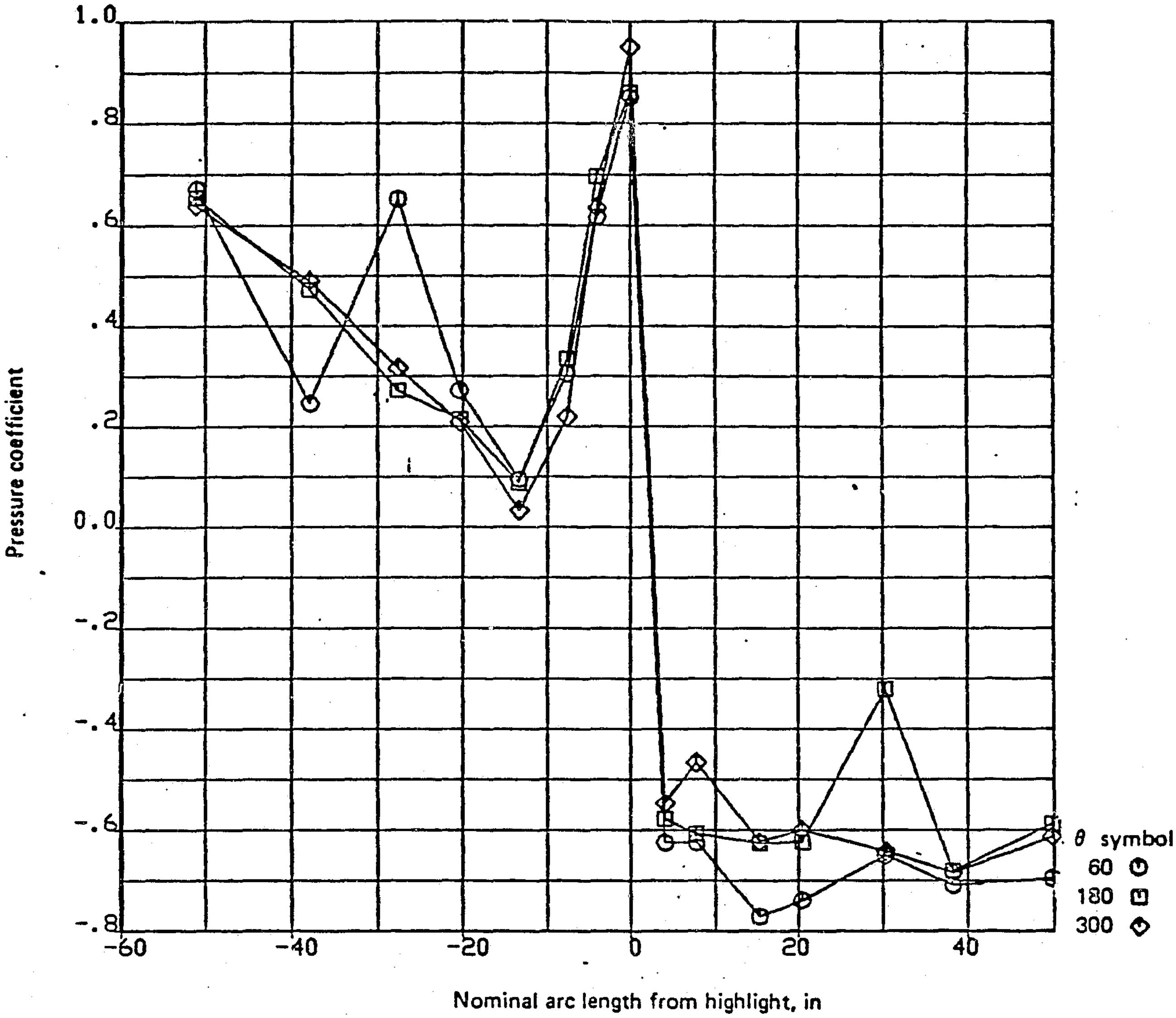


Figure A-56. Engine No. 4 Inlet Pressures, Condition 106, Maximum M

125209-55-438

ORIGINAL PAGE IS
OF POOR QUALITY

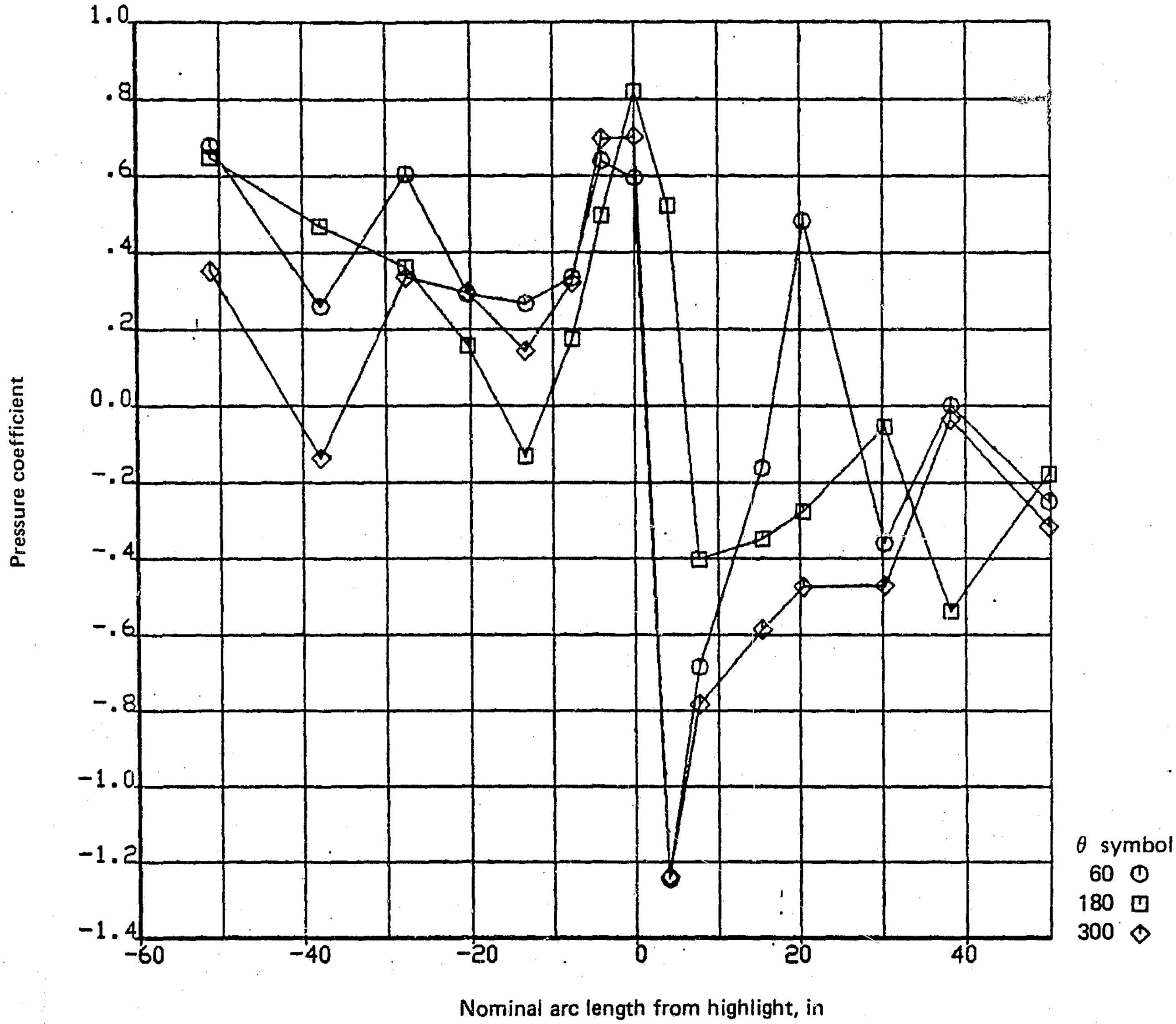


Figure A-57. Engine No. 4 Inlet Pressures, Condition 107, Inflight Relight

125209-55-437

ORIGINAL PAGE IS
OF POOR QUALITY

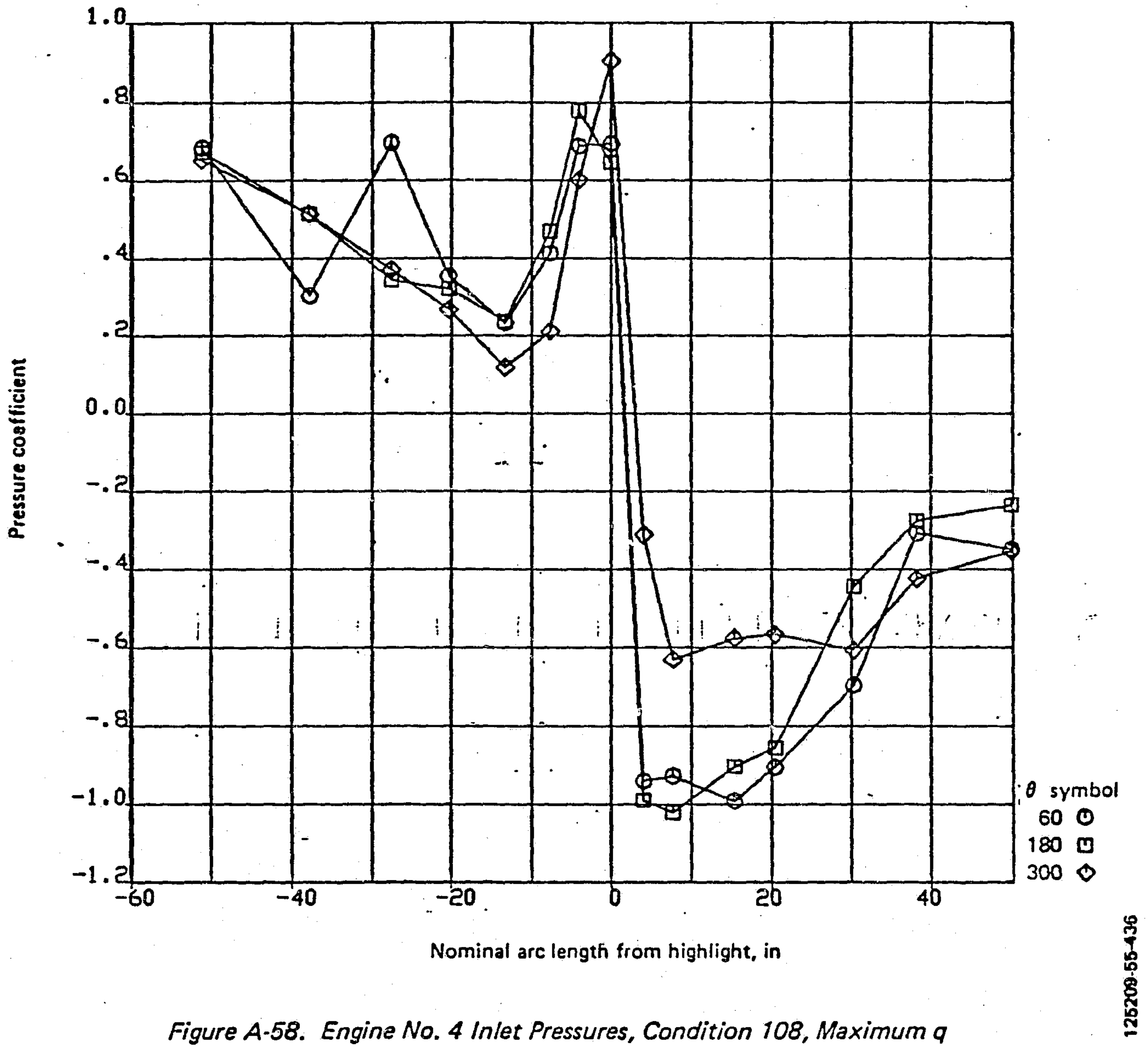


Figure A-58. Engine No. 4 Inlet Pressures, Condition 108, Maximum q

ORIGINAL PAGE IS
OF POOR QUALITY

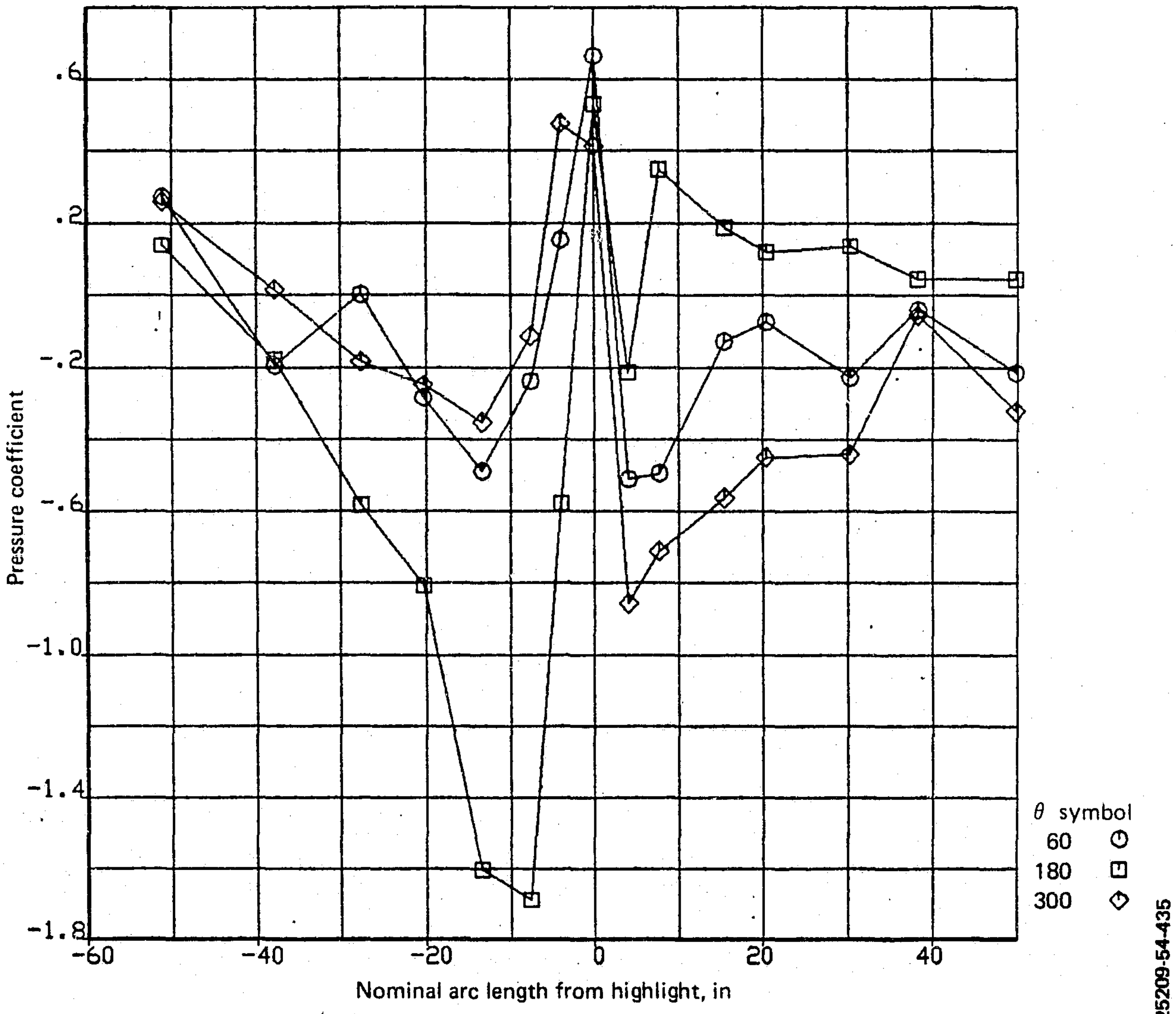
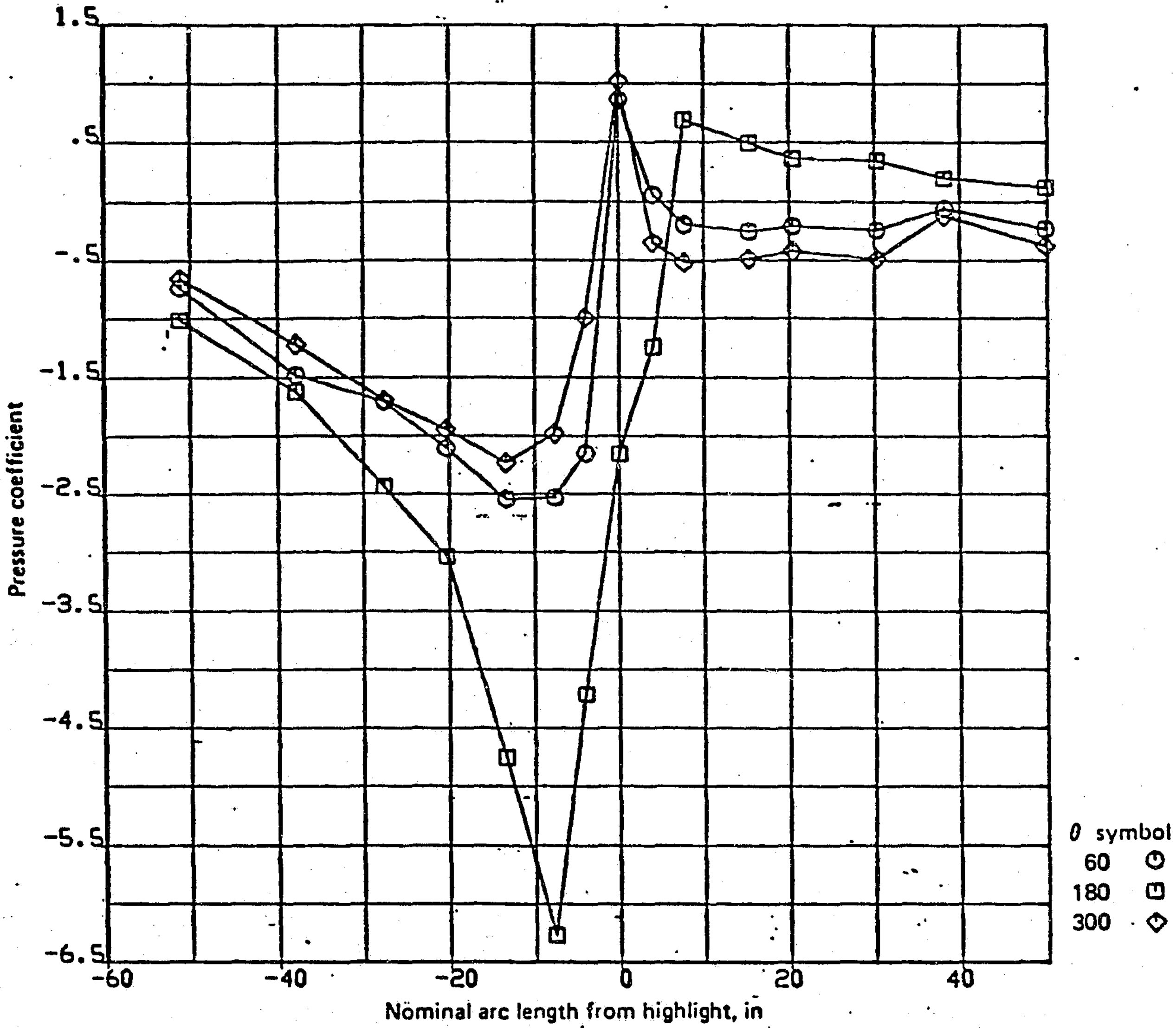


Figure A-59. Engine No. 4 Inlet Pressures, Condition 109, Stall Warning (Flaps Up)

C-3

ORIGINAL PAGE IS
OF POOR QUALITY



125209-54-434

Figure A-60. Engine No. 4 Inlet Pressures, Condition 110, Stall Warning (Flaps 10)

ORIGINAL PAGE IS
OF POOR QUALITY

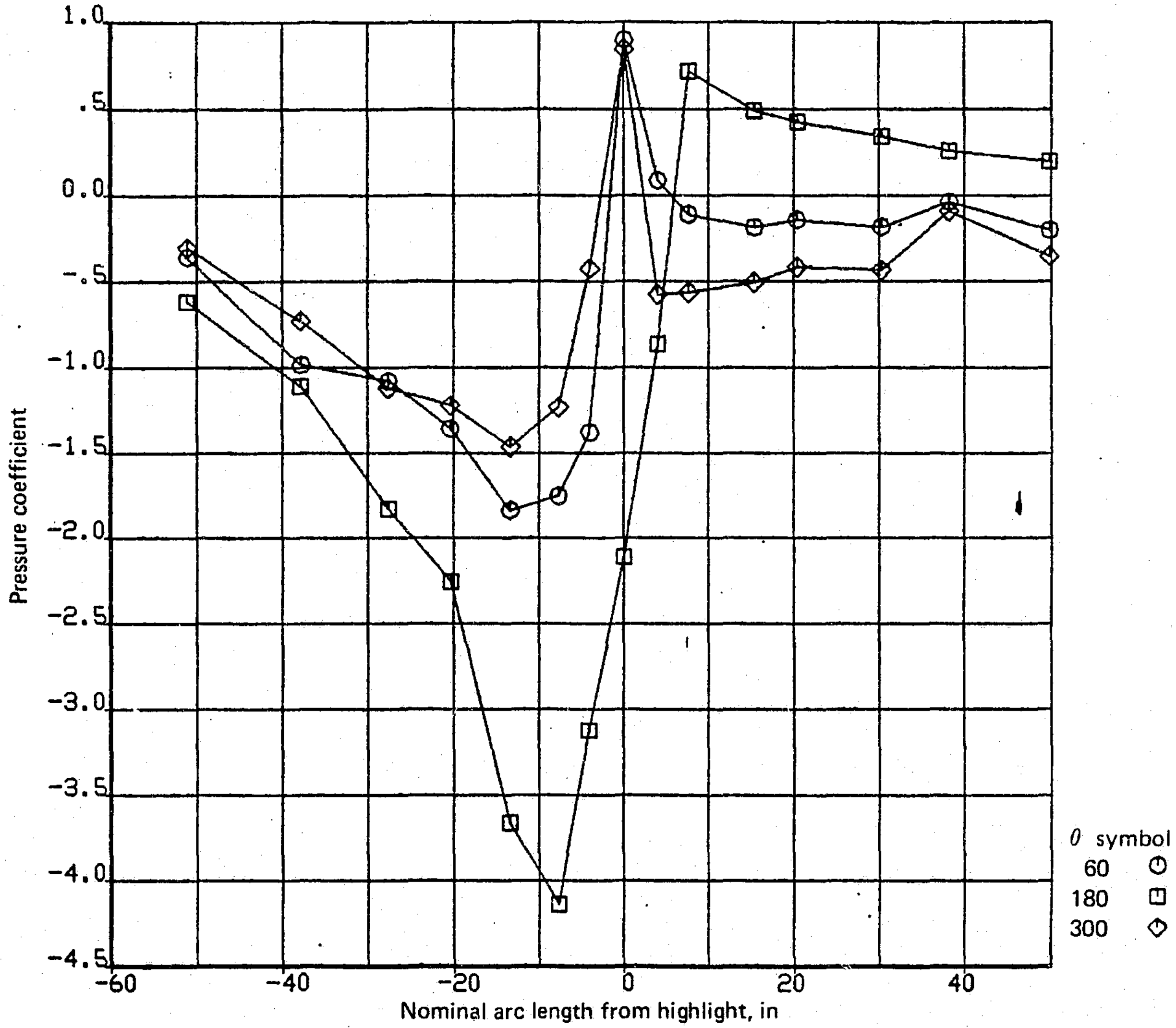


Figure A-61. Engine No. 4 Inlet Pressures, Condition 111, Stall Warning (Flaps 30)

125209-54-433

ORIGINAL PAGE IS
OF POOR QUALITY

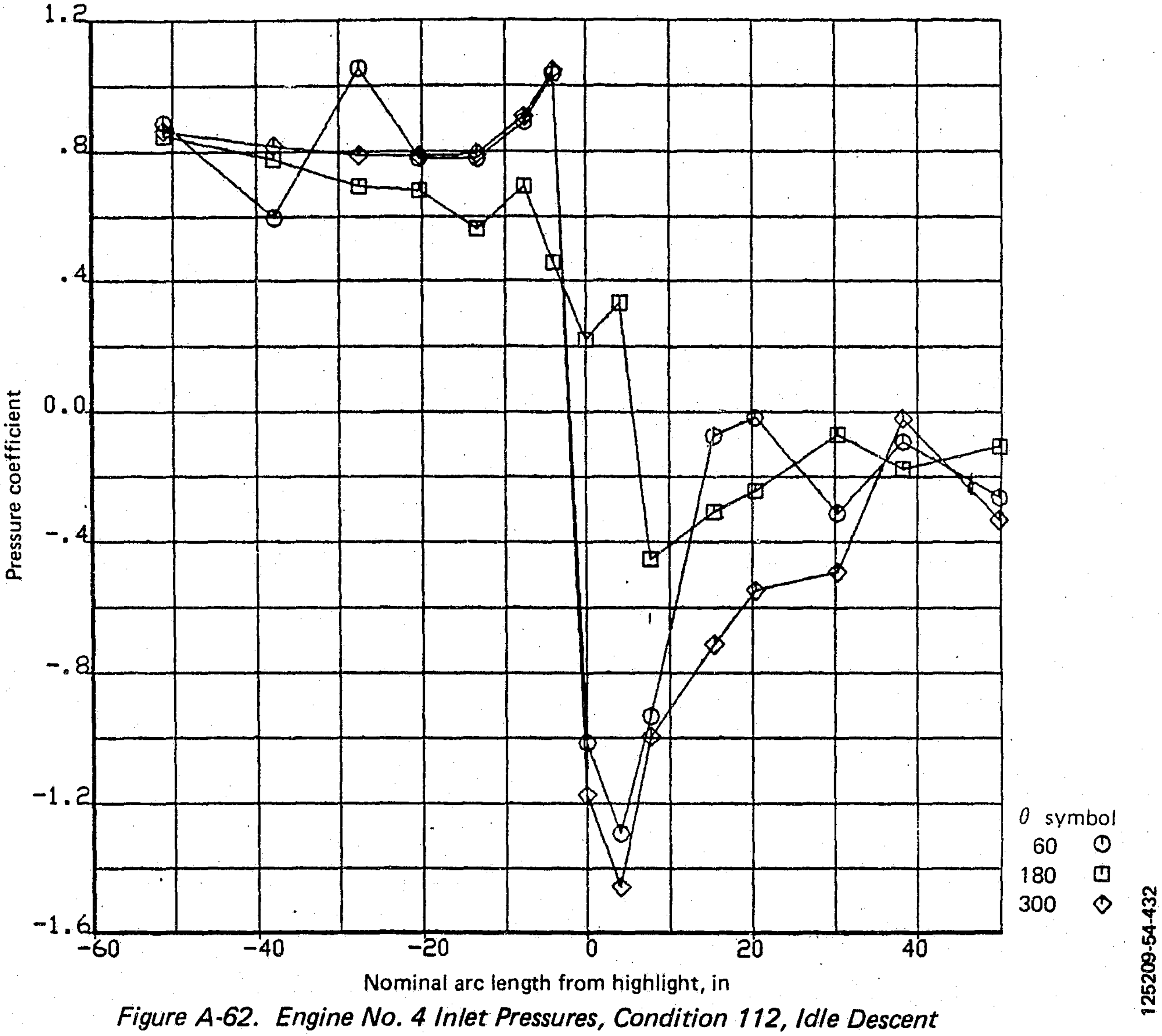


Figure A-62. Engine No. 4 Inlet Pressures, Condition 112, Idle Descent

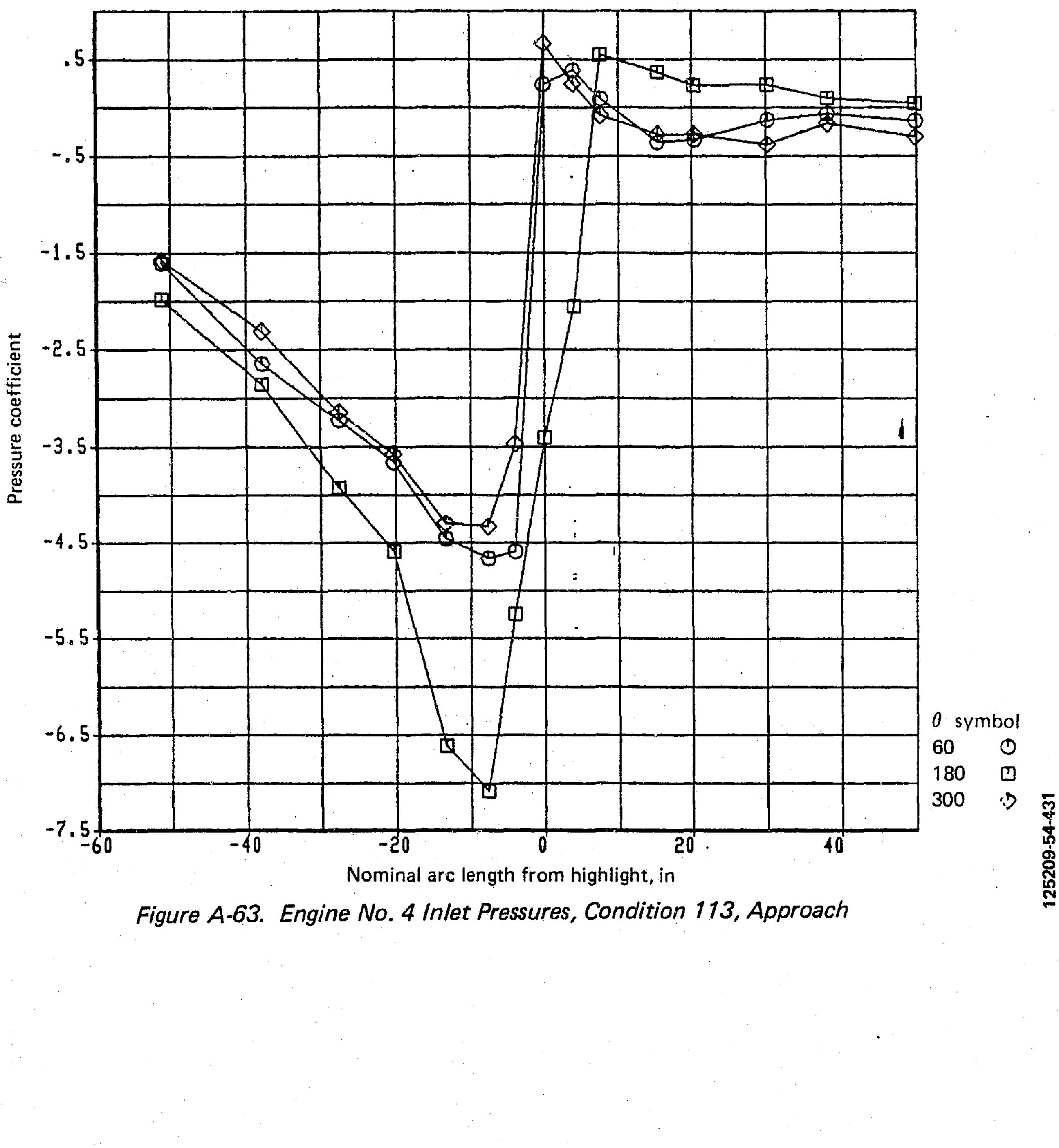


Figure A-63. Engine No. 4 Inlet Pressures, Condition 113, Approach

ORIGINAL PAGE IS
OF POOR QUALITY

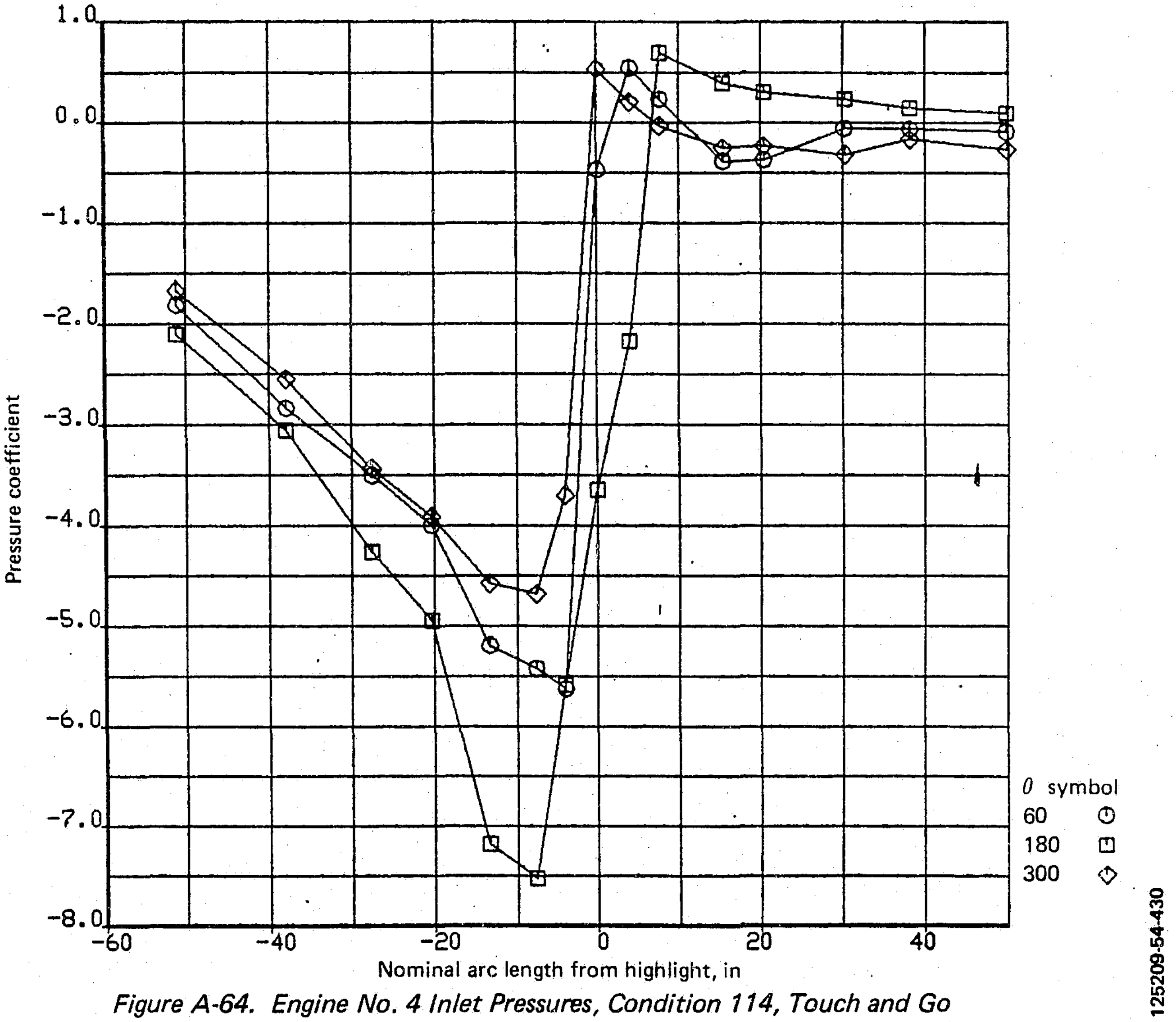


Figure A-64. Engine No. 4 Inlet Pressures, Condition 114, Touch and Go

ORIGINAL PAGE IS
OF POOR QUALITY

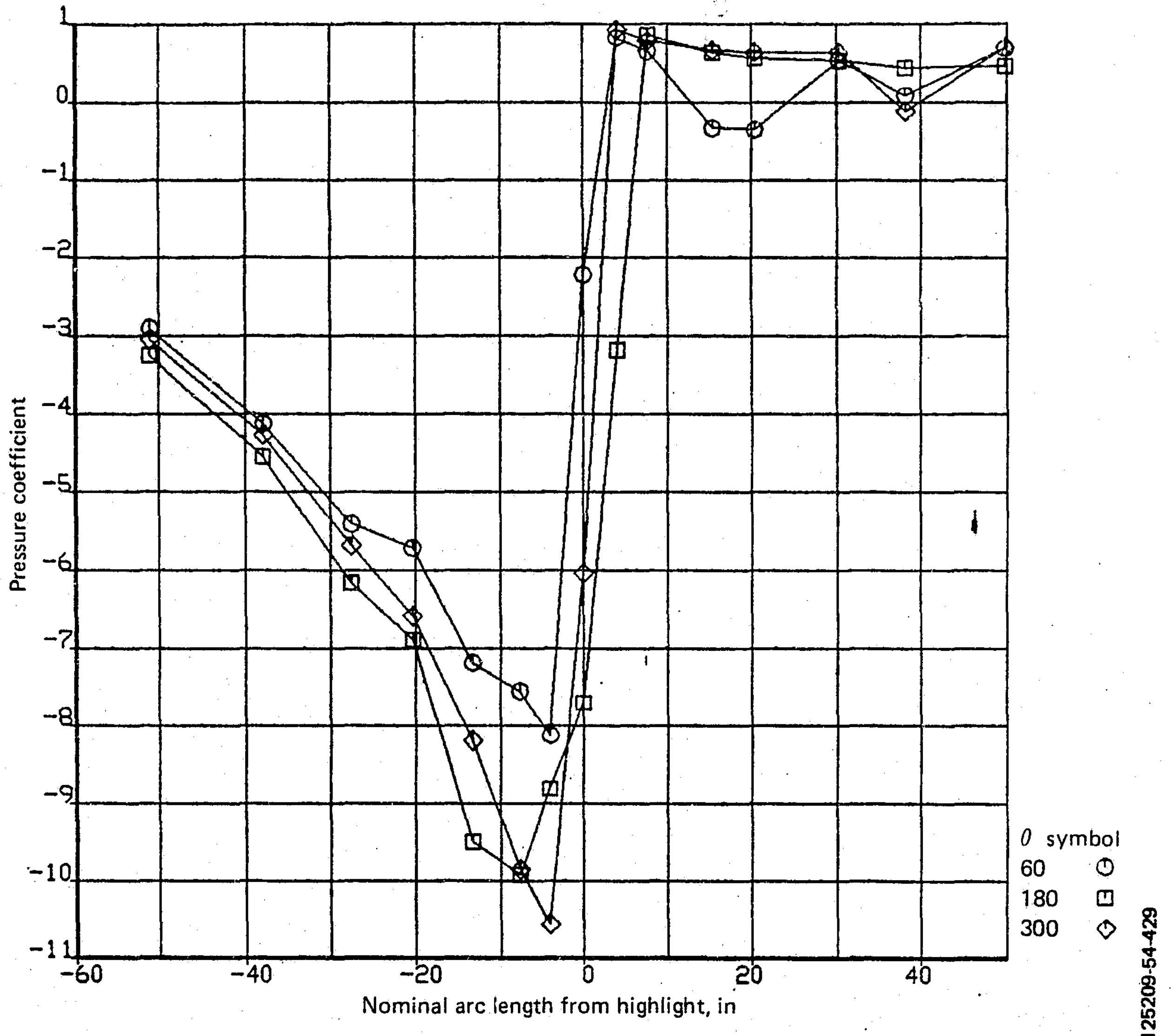


Figure A-65. Engine No. 4 Inlet Pressures, Condition 115, Thrust Reverse

ORIGINAL PAGE IS
OF POOR QUALITY

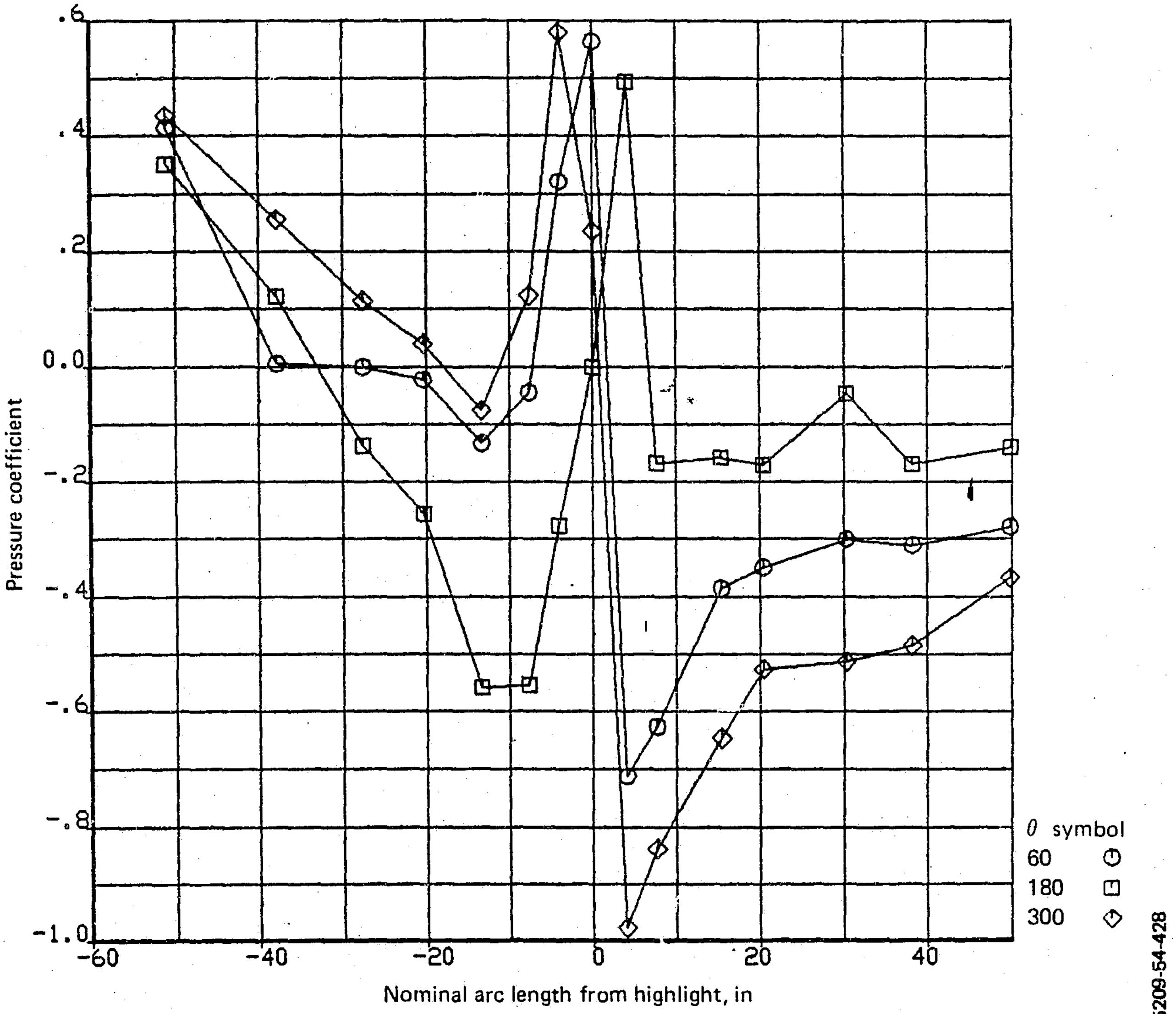


Figure A-66. Engine No. 4 Inlet Pressures, Condition 116, 2.0g Left Turn (Flaps Up)

ORIGINAL PAGE IS
OF POOR QUALITY

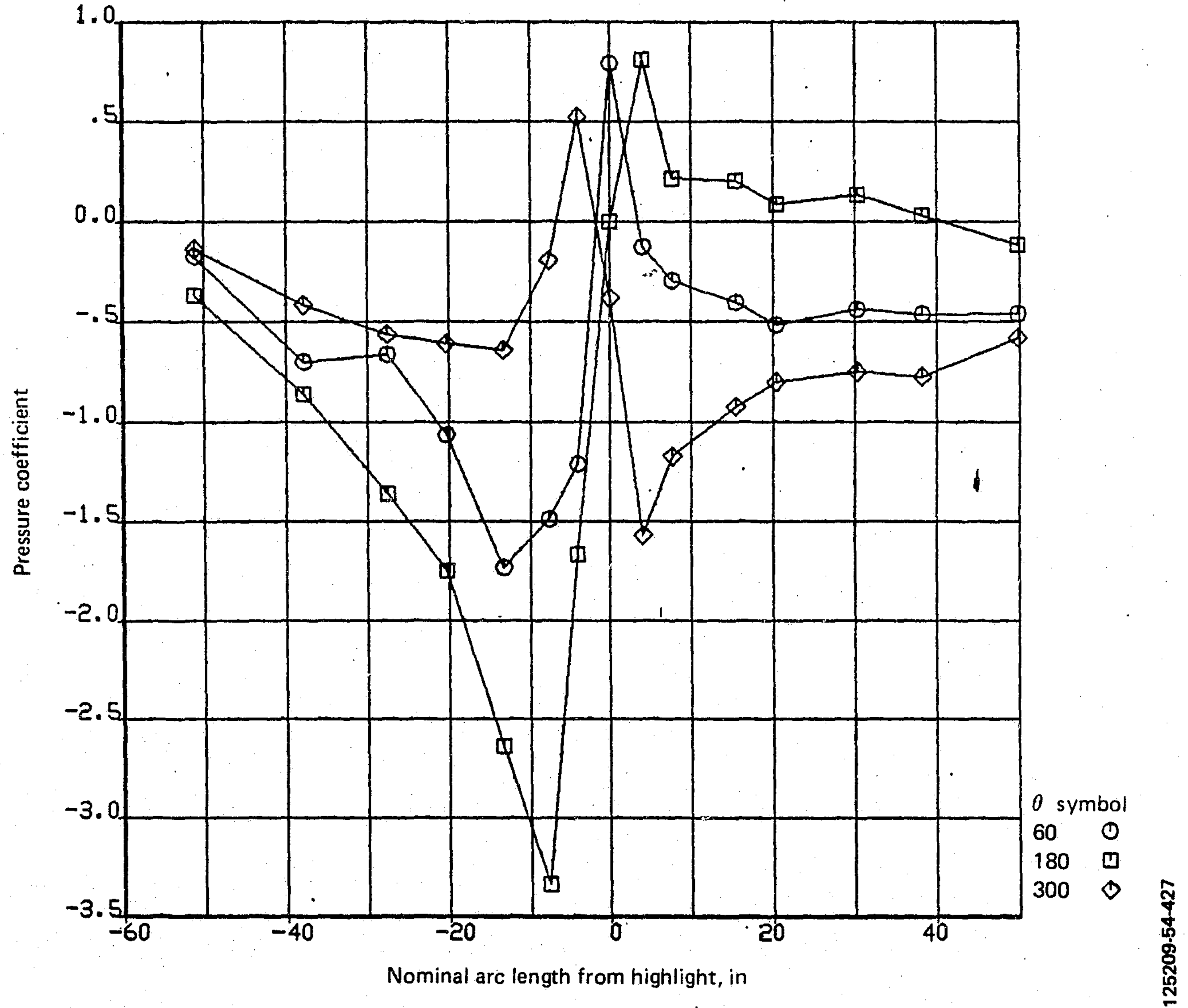


Figure A-67. Engine No. 4 Inlet Pressures, Condition 117, 1.6g Left Turn (Flaps 30)

ORIGINAL PAGE IS
OF POOR QUALITY

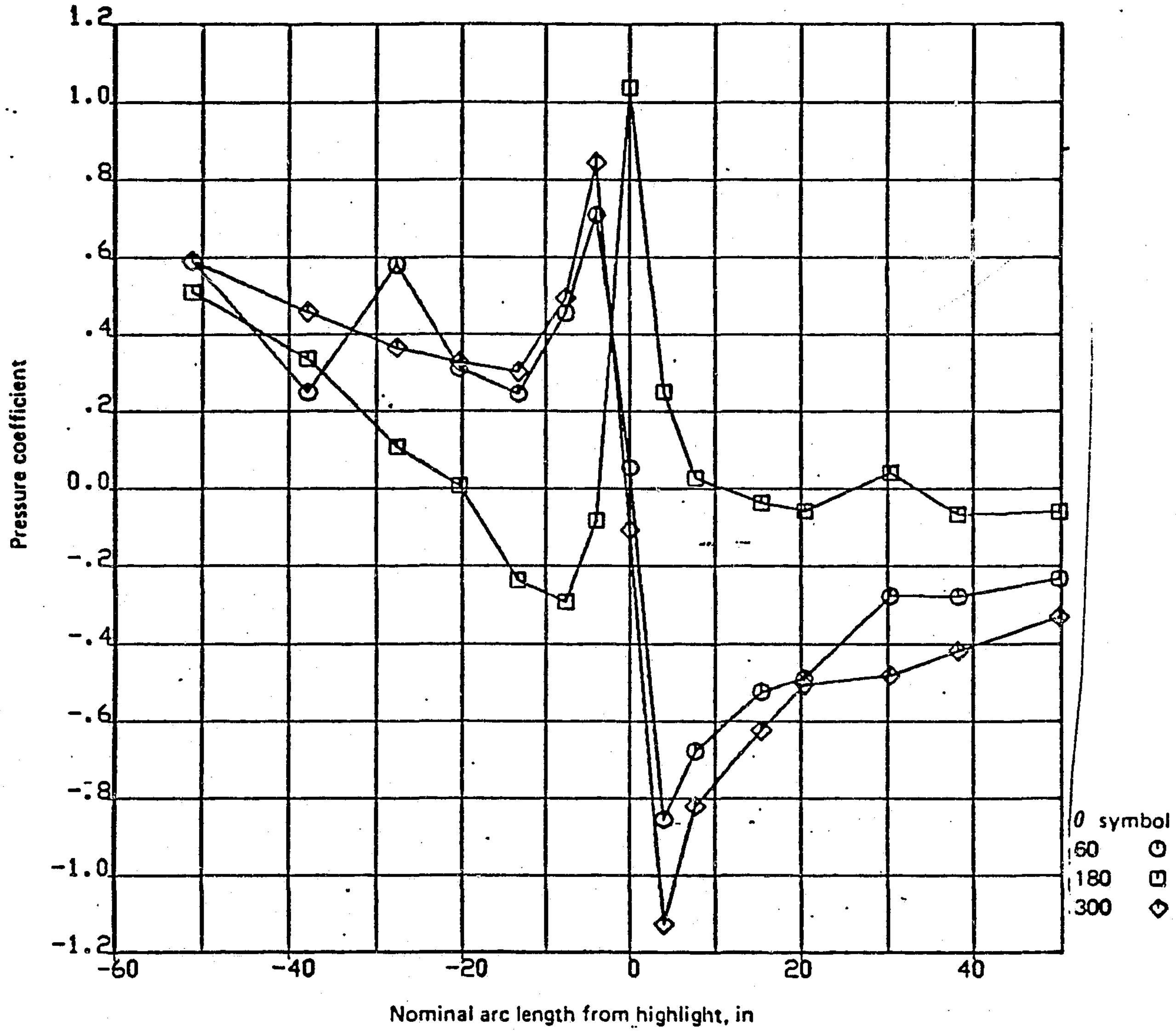


Figure A-68. Engine No. 4 Inlet Pressures, Condition 120, 2.0g Right Turn (Flaps Up)

125209-54-426

ORIGINAL PAGE IS
OF POOR QUALITY

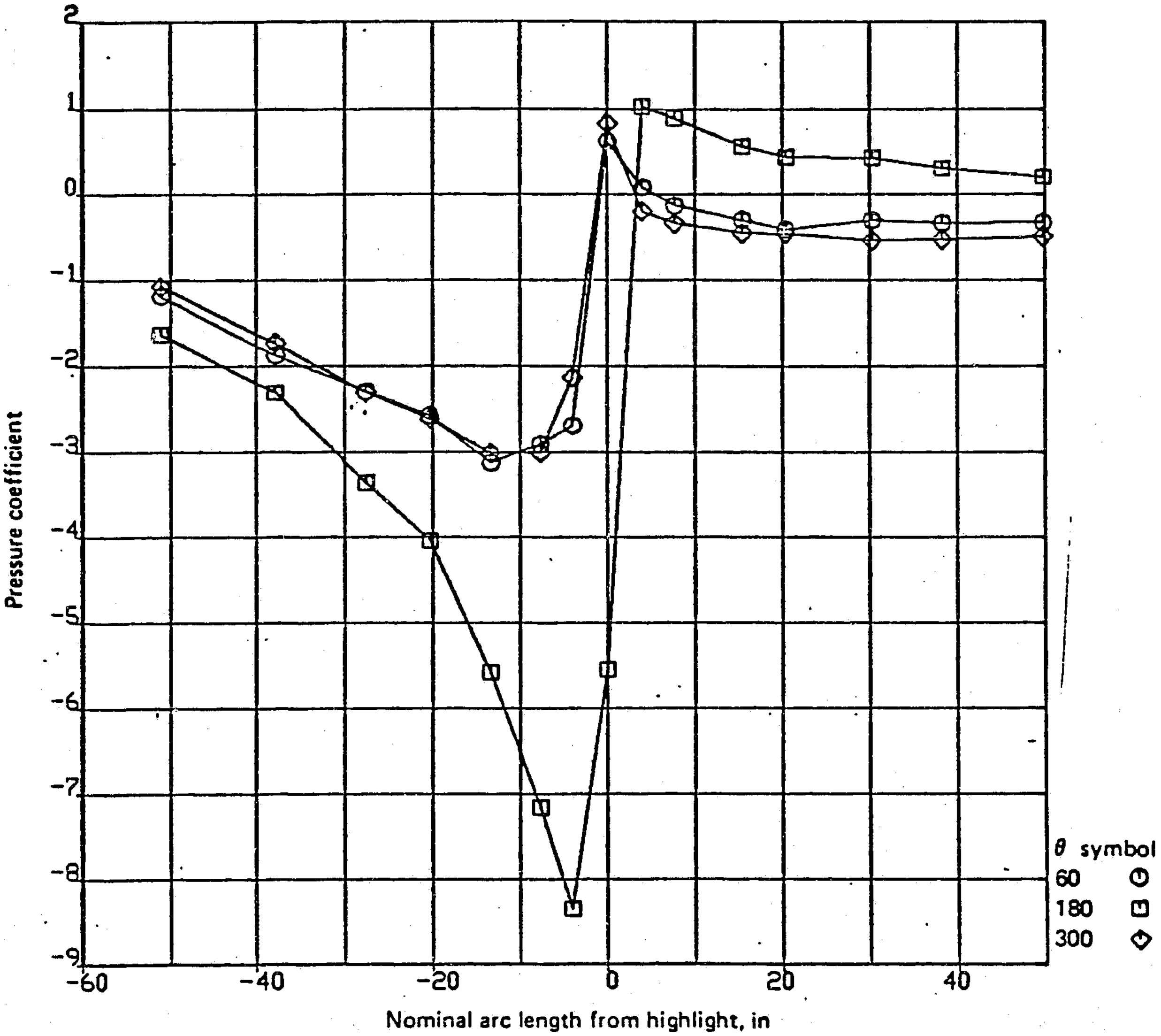


Figure A-69. Engine No. 4 Inlet Pressures, Condition 121, 1.6g Right Turn (Flaps 30)

125209-54-425

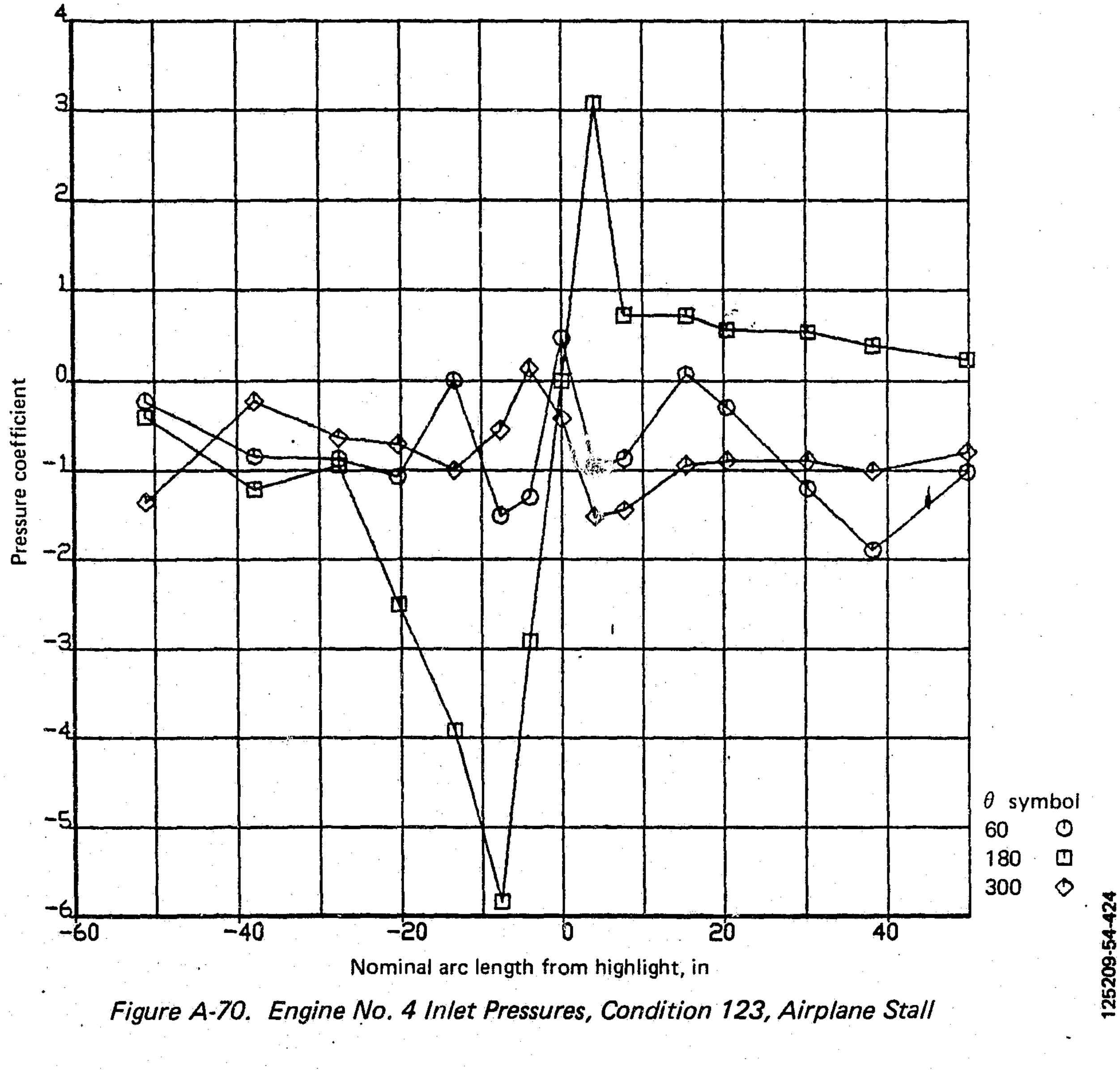
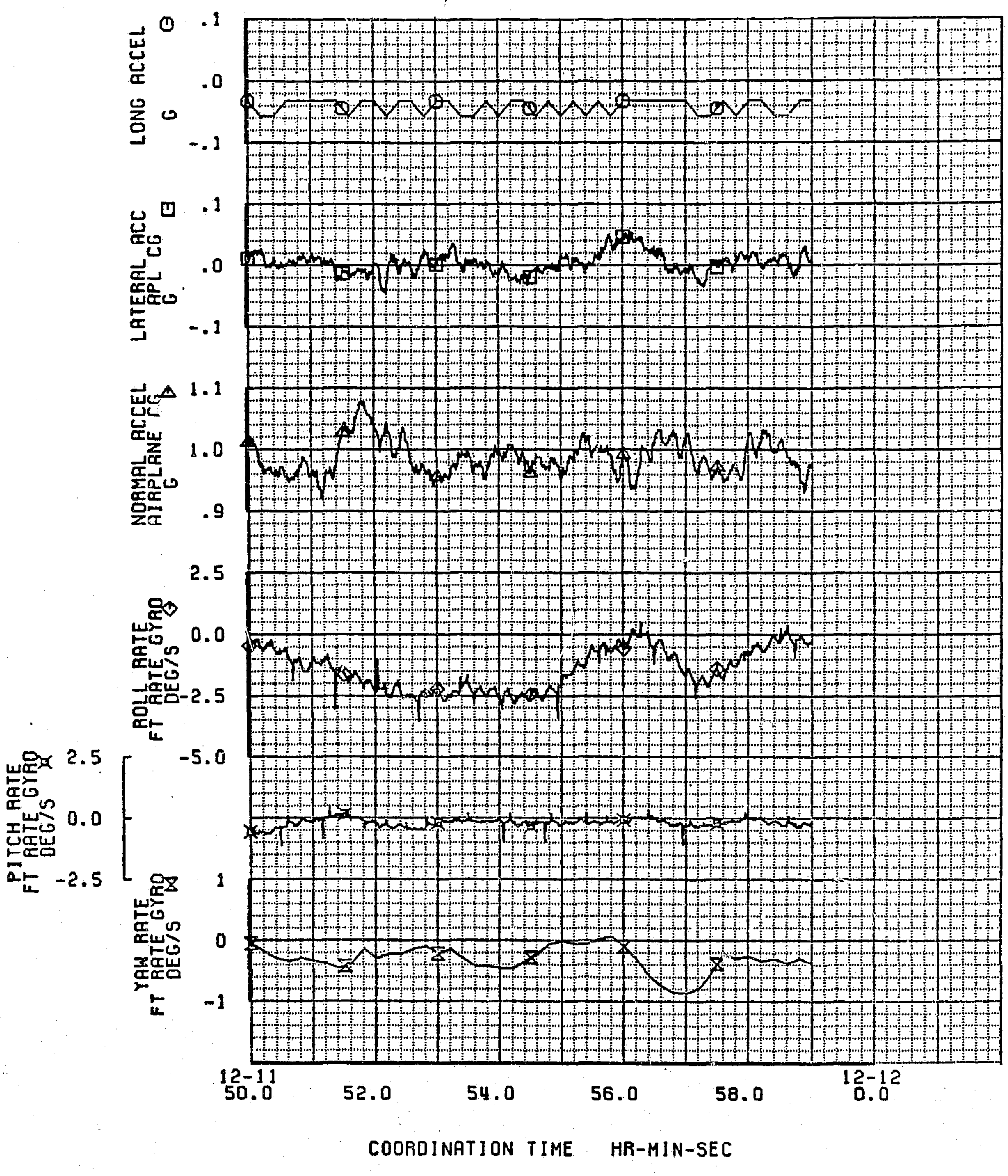


Figure A-70. Engine No. 4 Inlet Pressures, Condition 123, Airplane Stall

ORIGINAL PAGE IS
OF POOR QUALITY



125209-21-115

Figure A-71. Airplane Center-of-Gravity Accelerations, Mild Gust

ORIGINAL PAGE IS
OF POOR QUALITY

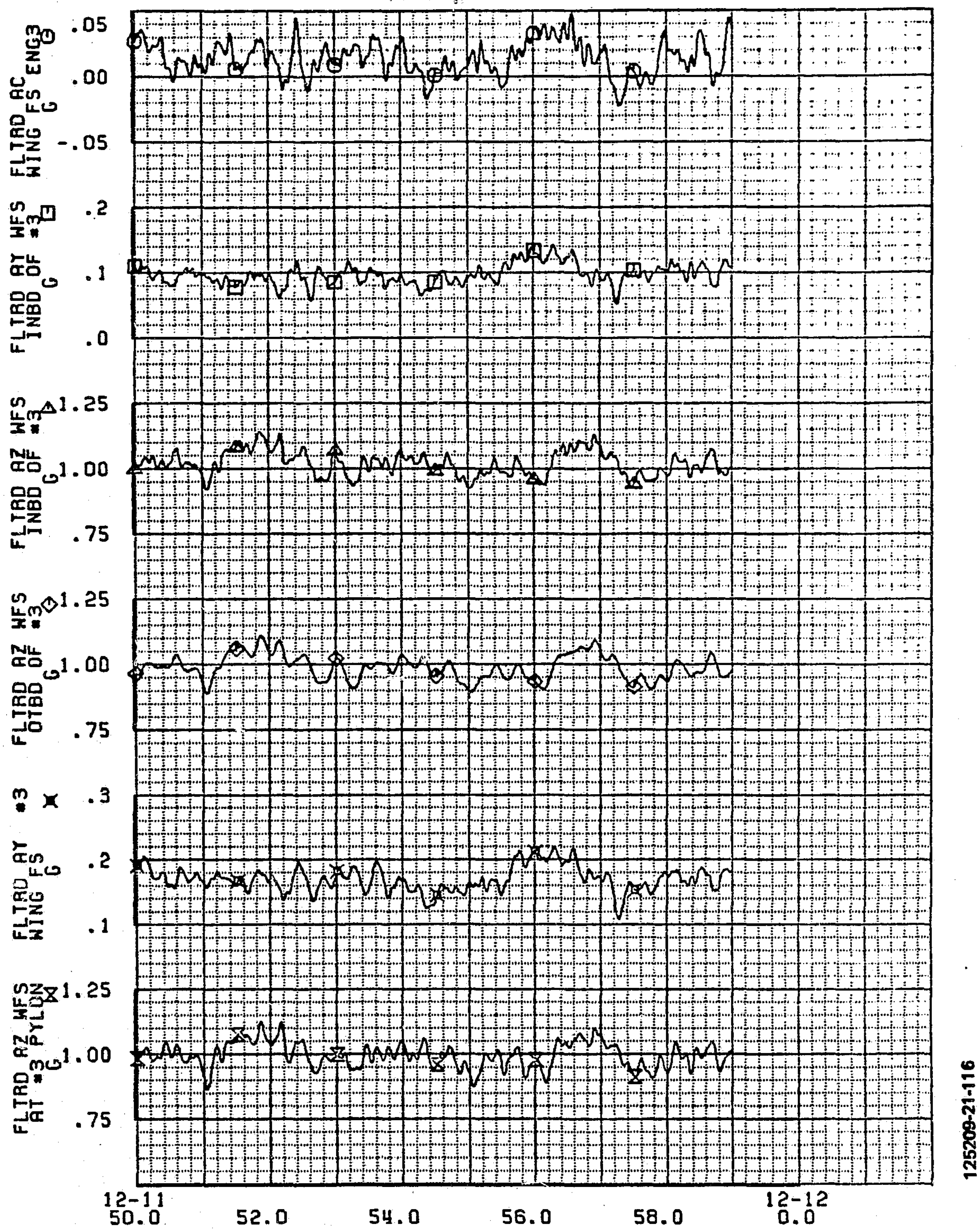


Figure A-72. Engine No. 3 Wing/Strut Accelerations, Mild Gust

ORIGINAL PAGE IS
OF POOR QUALITY

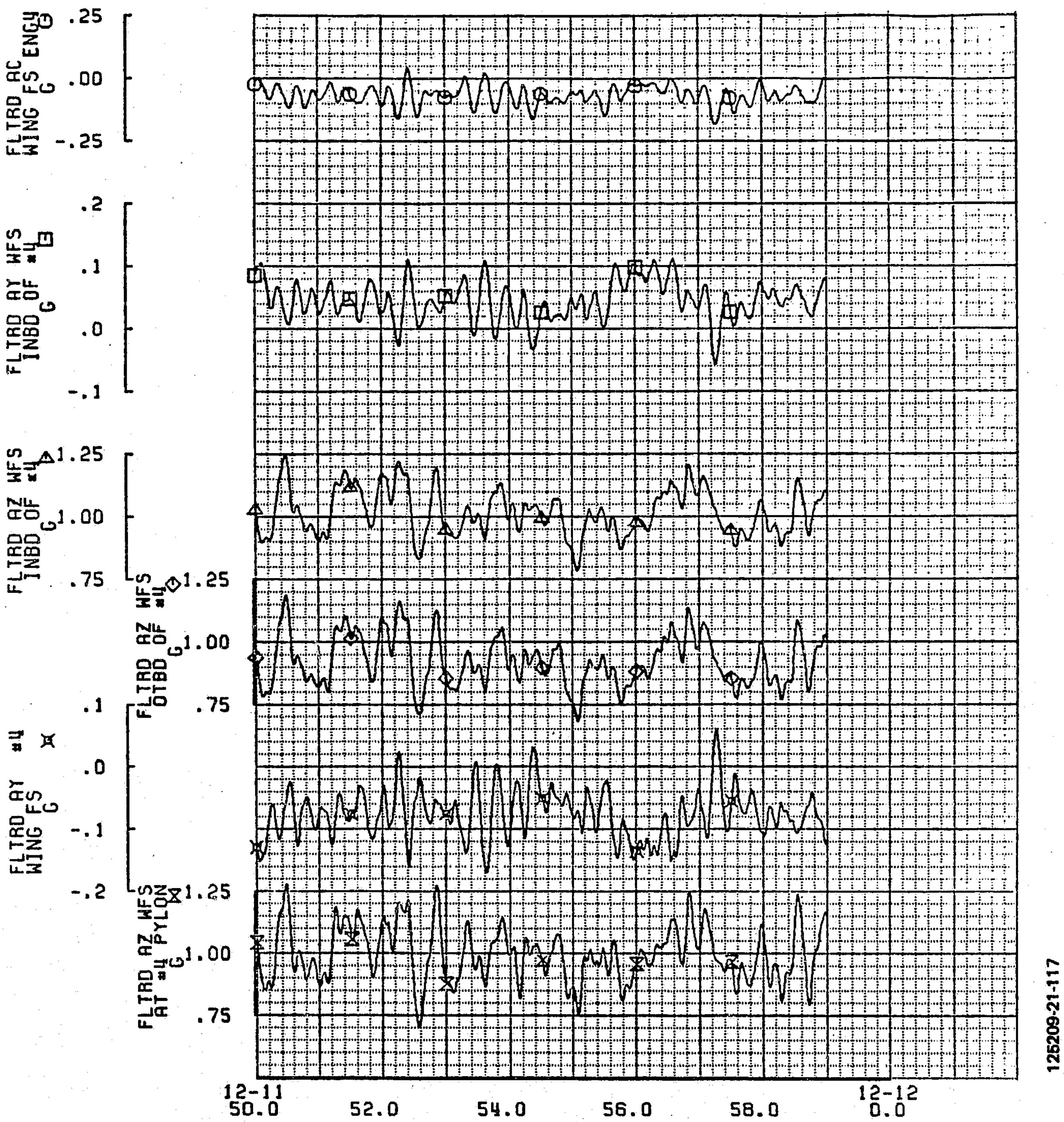


Figure A-73. Engine No. 4 Wing/Strut Accelerations, Mild Gust

ORIGINAL PAGE IS
OF POOR QUALITY

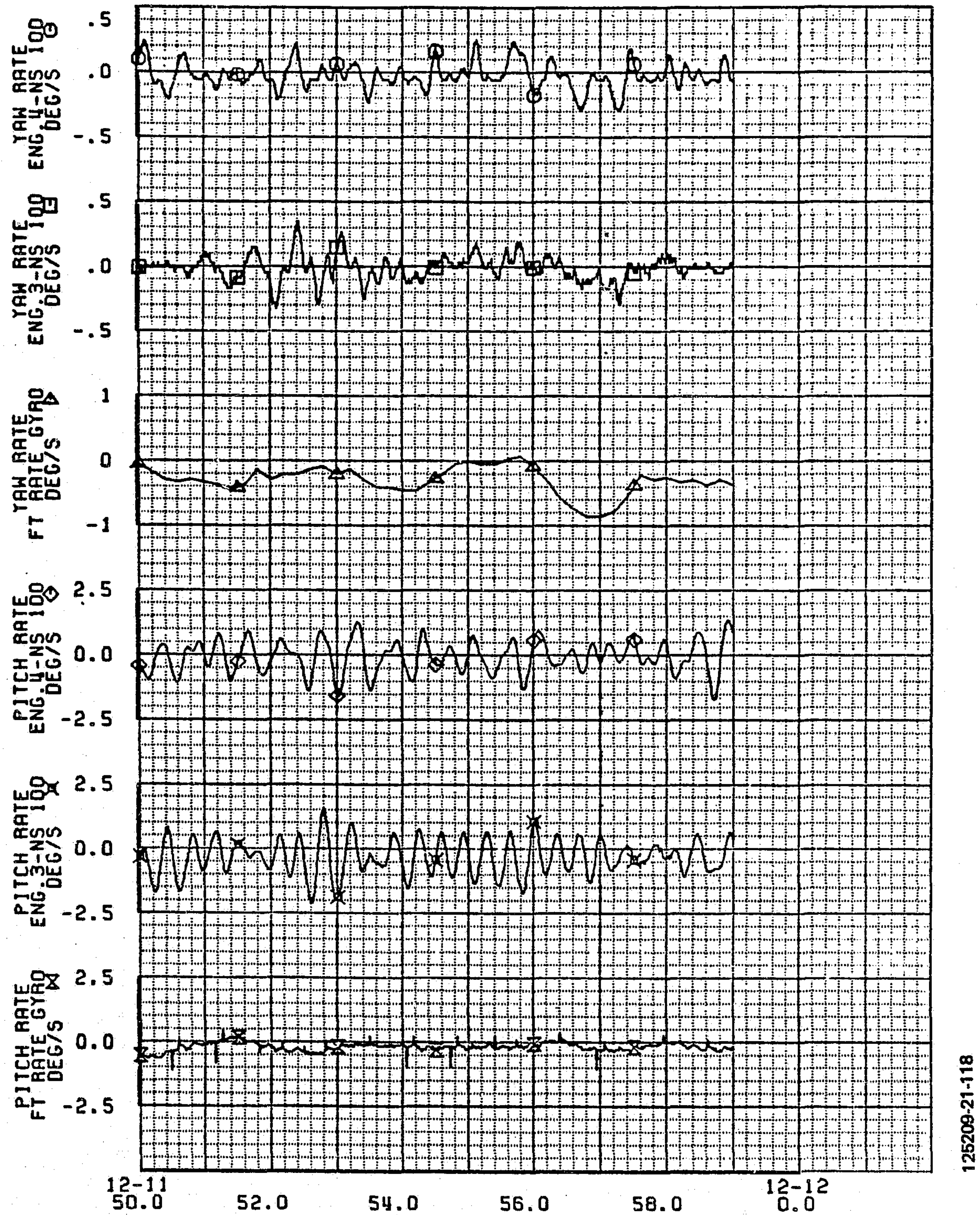
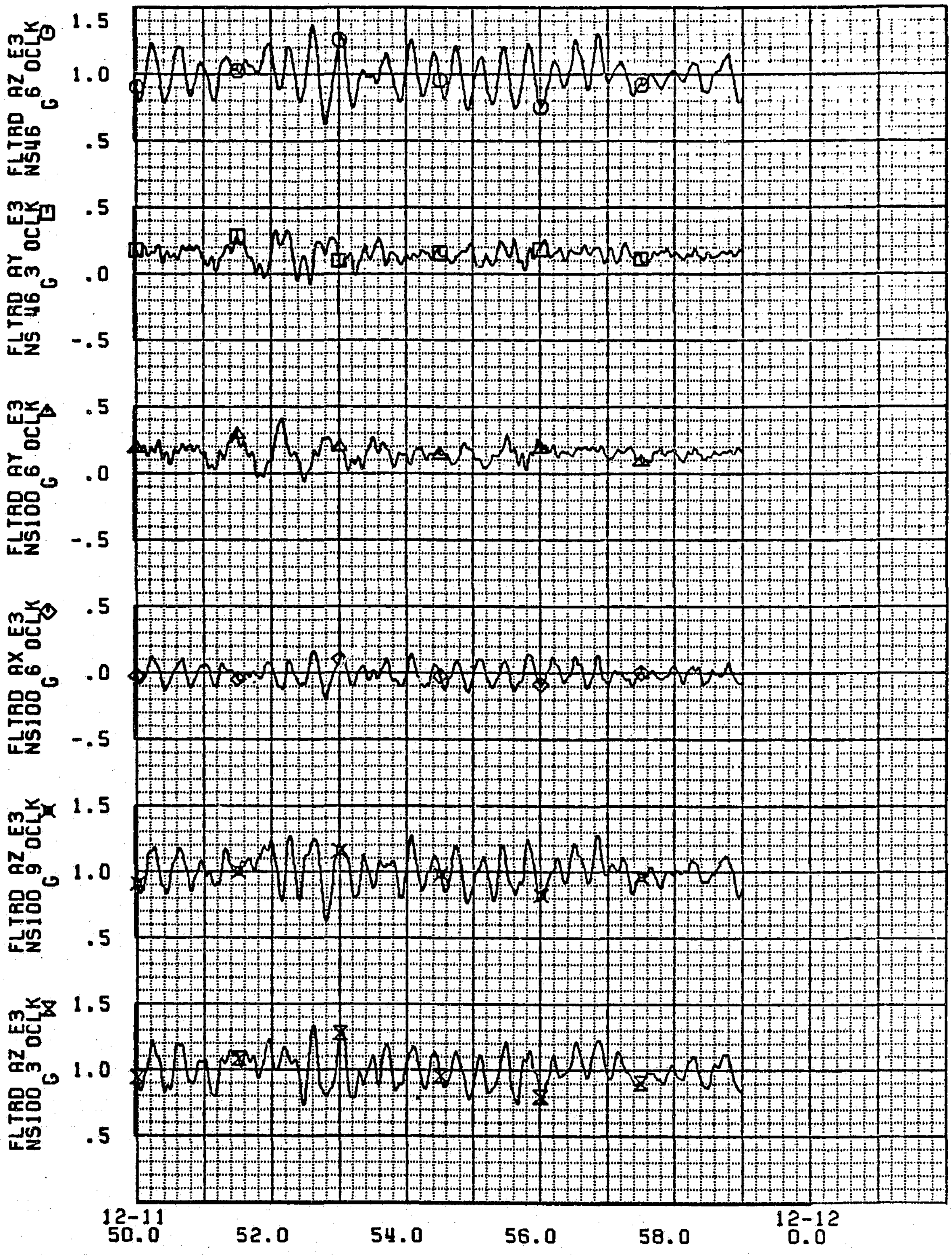


Figure A-74. Engine Angular Rates, Mild Gust

ORIGINAL PAGE IS
OF POOR QUALITY



125209-21-119

Figure A-75. Engine No. 3 Accelerations, Mild Gust

ORIGINAL PAGE IS
OF POOR QUALITY

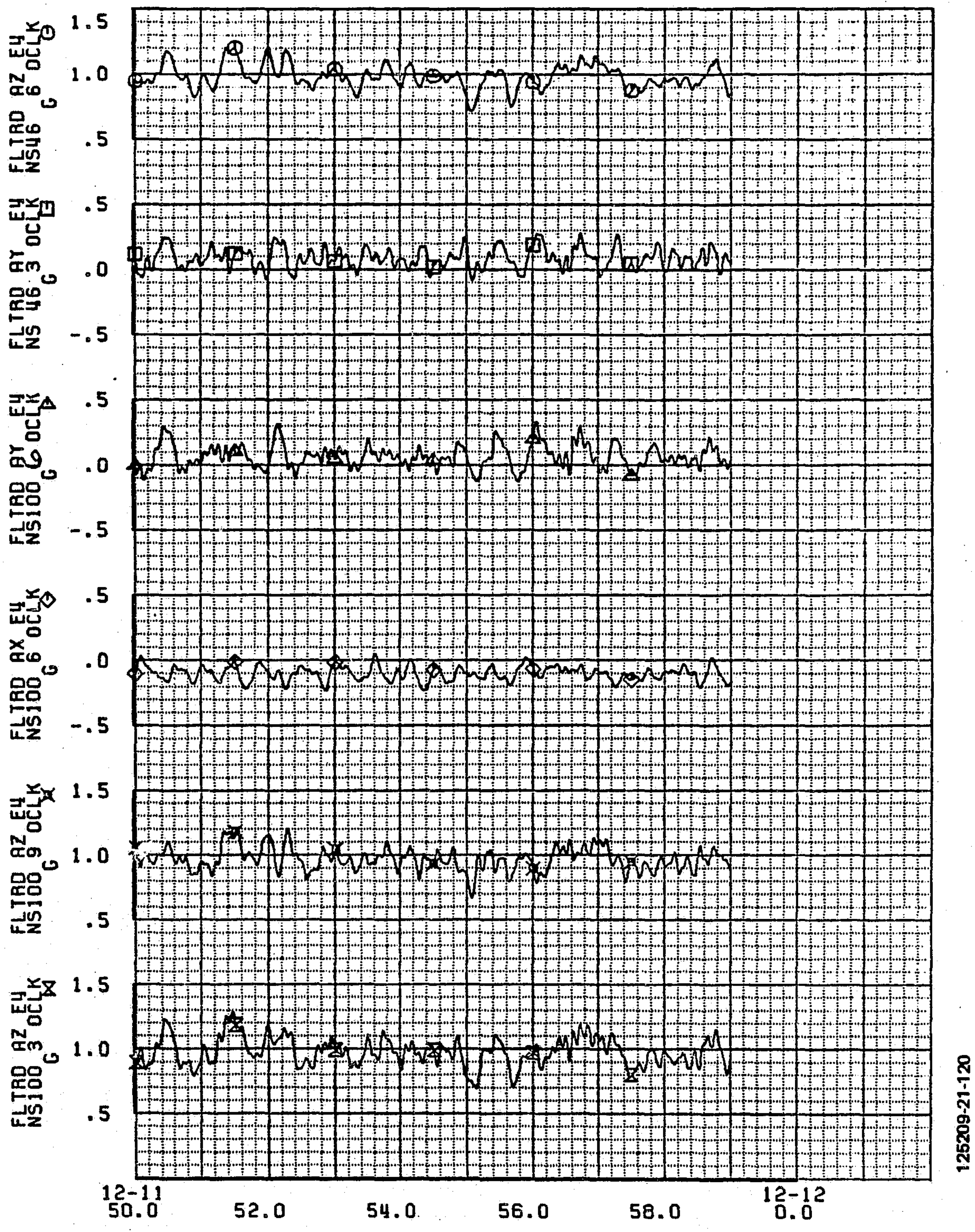


Figure A-76. Engine No. 4 Accelerations, Mild Gust

ORIGINAL PAGE IS
OF POOR QUALITY

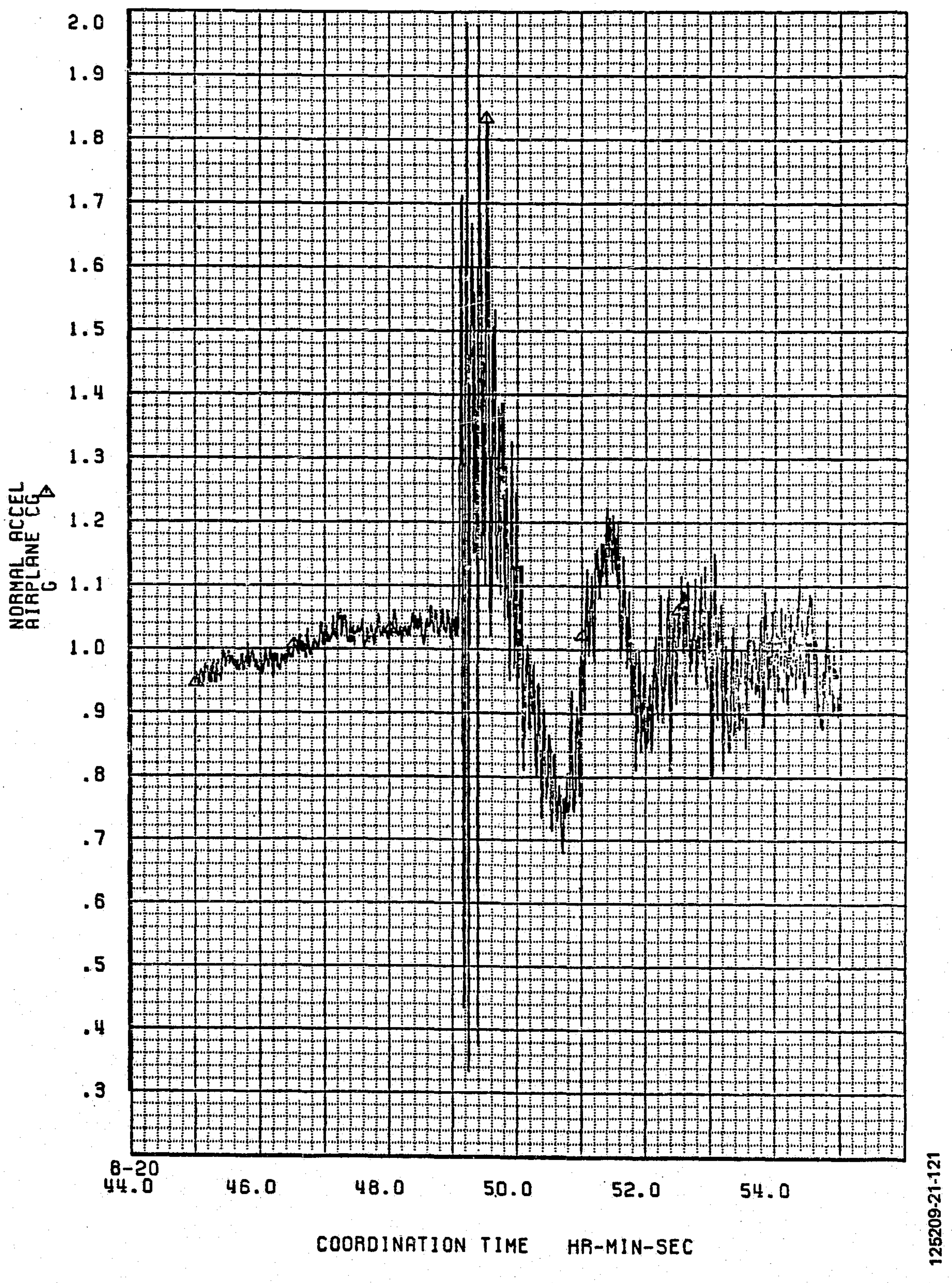


Figure A-77. Airplane Center-of-Gravity Normal Acceleration, Hard Landing

ORIGINAL PAGE IS
OF POOR QUALITY

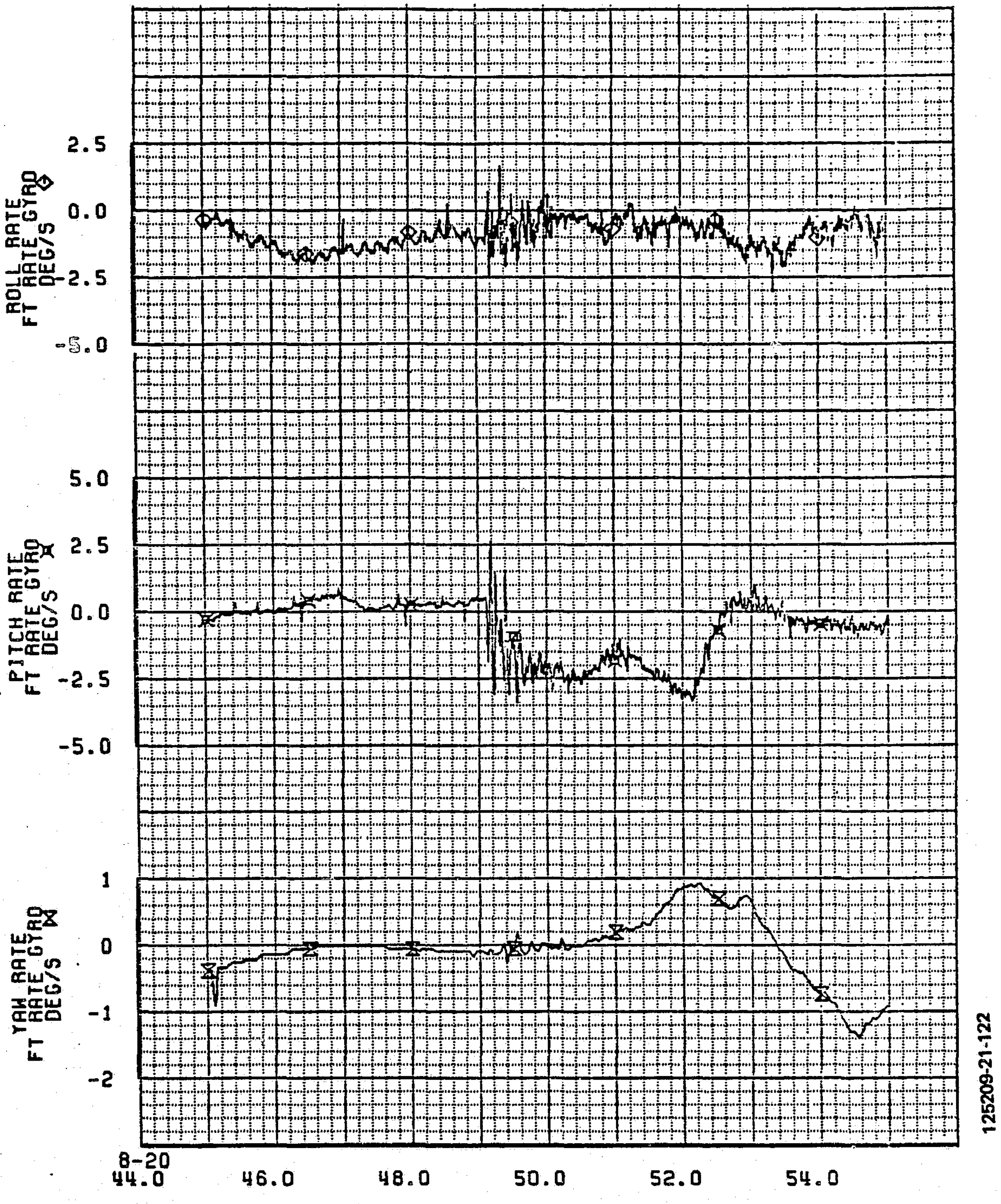


Figure A-78. Airplane Center-of-Gravity Angular Rates, Hard Landing

ORIGINAL PAGE IS
OF POOR QUALITY

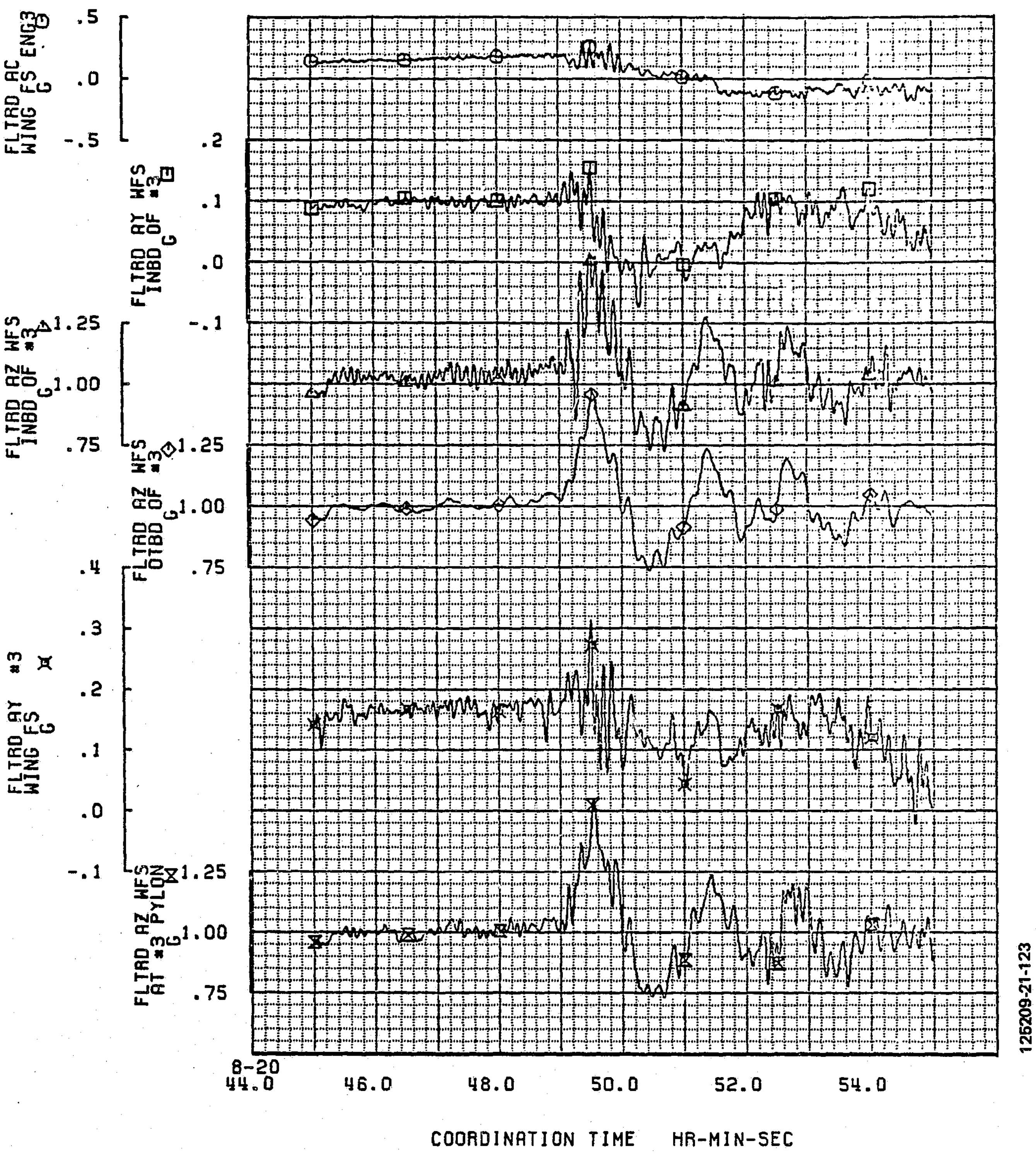


Figure A-79. Engine No. 3 Wing/Strut Accelerations, Hard Landing

ORIGINAL PAGE IS
OF POOR QUALITY

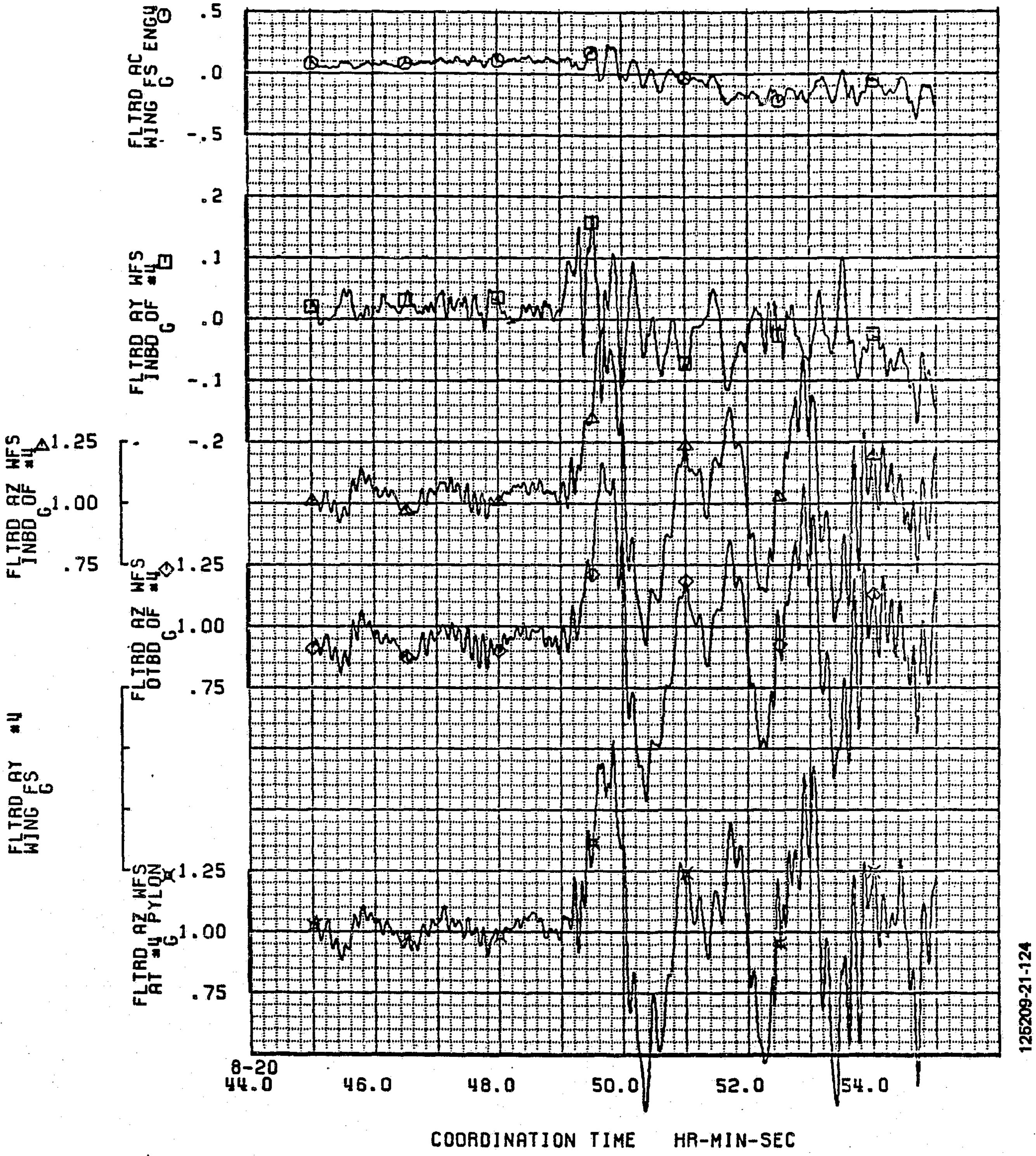


Figure A-80. Engine No. 4 Wing/Strut Accelerations, Hard Landing

ORIGINAL PAGE IS
OF POOR QUALITY

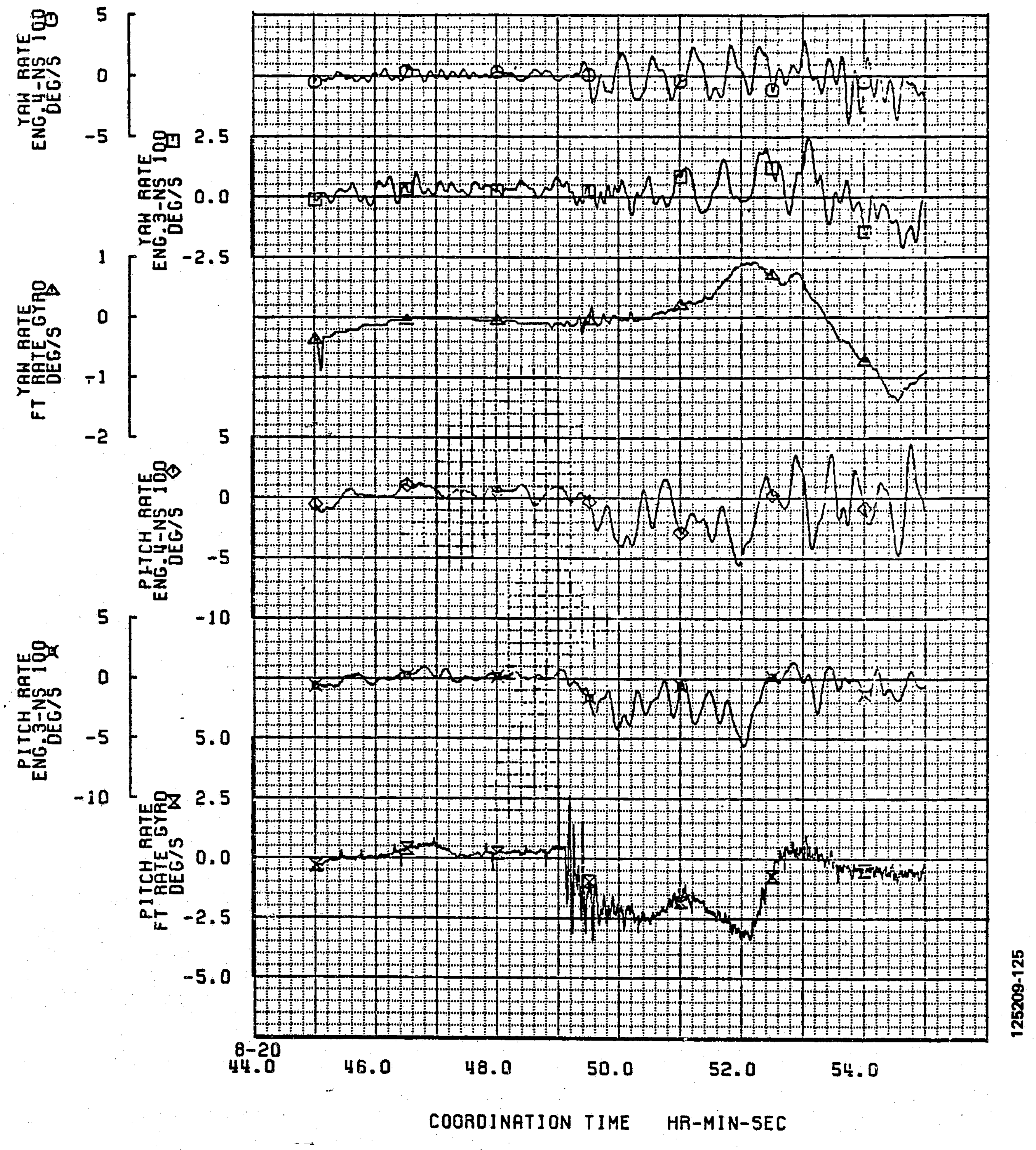


Figure A-81. Engine Angular Rates, Hard Landing

ORIGINAL PAGE IS
OF POOR QUALITY

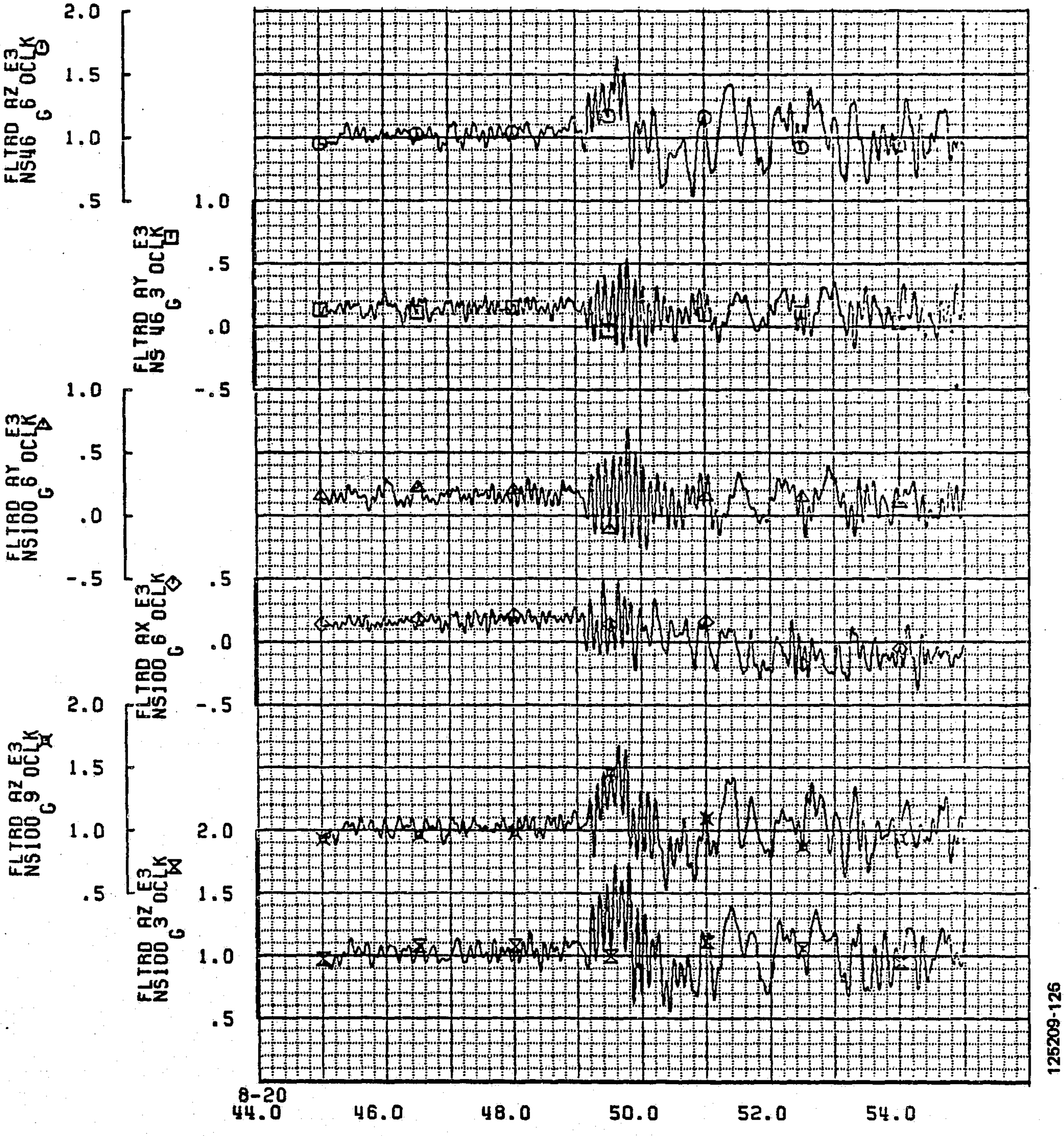


Figure A-82. Engine No. 3 Accelerations, Hard Landing

ORIGINAL PAGE IS
OF POOR QUALITY

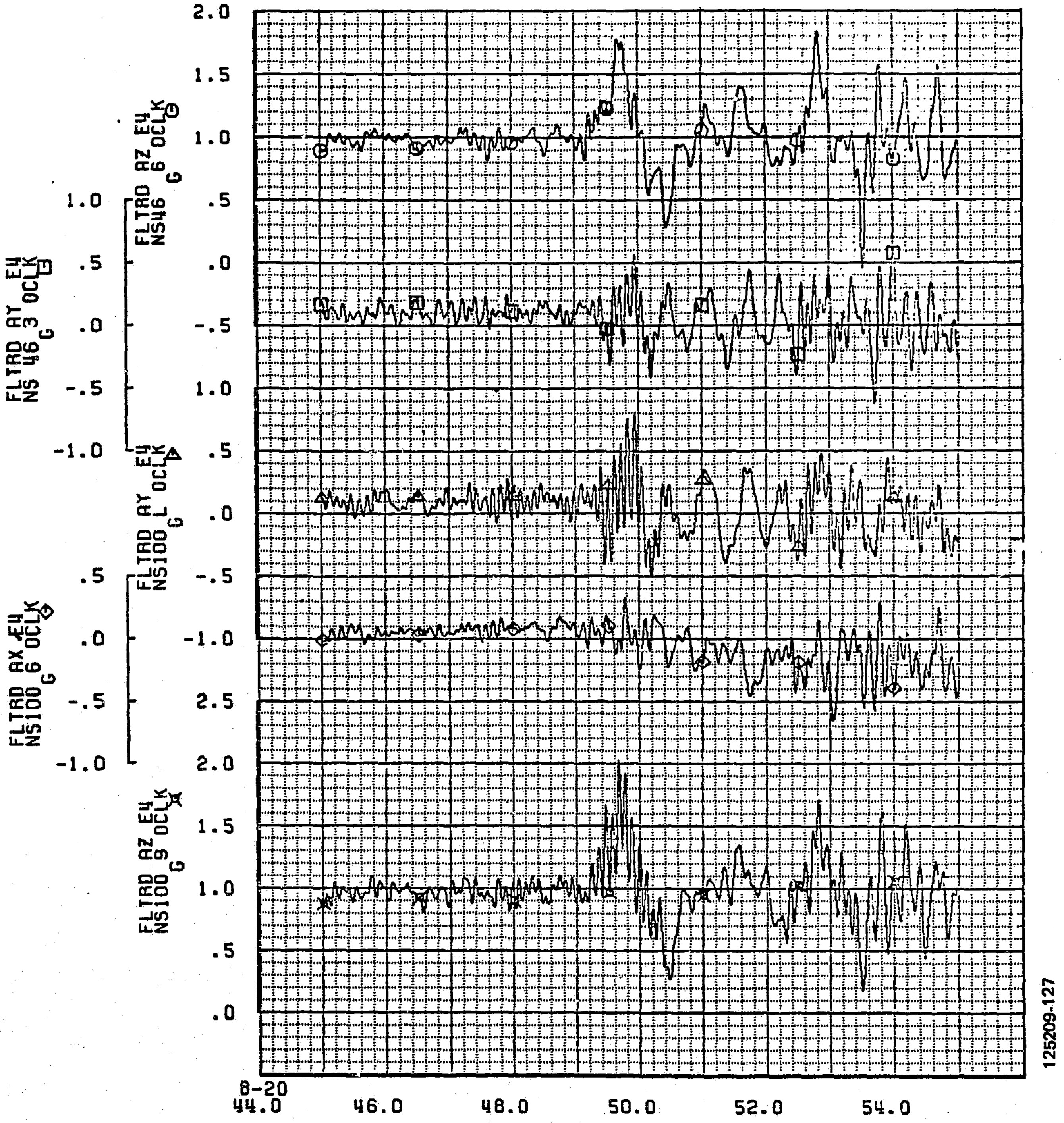


Figure A-83. Engine No. 4 Accelerations, Hard Landing

ORIGINAL PAGE IS
OF POOR QUALITY

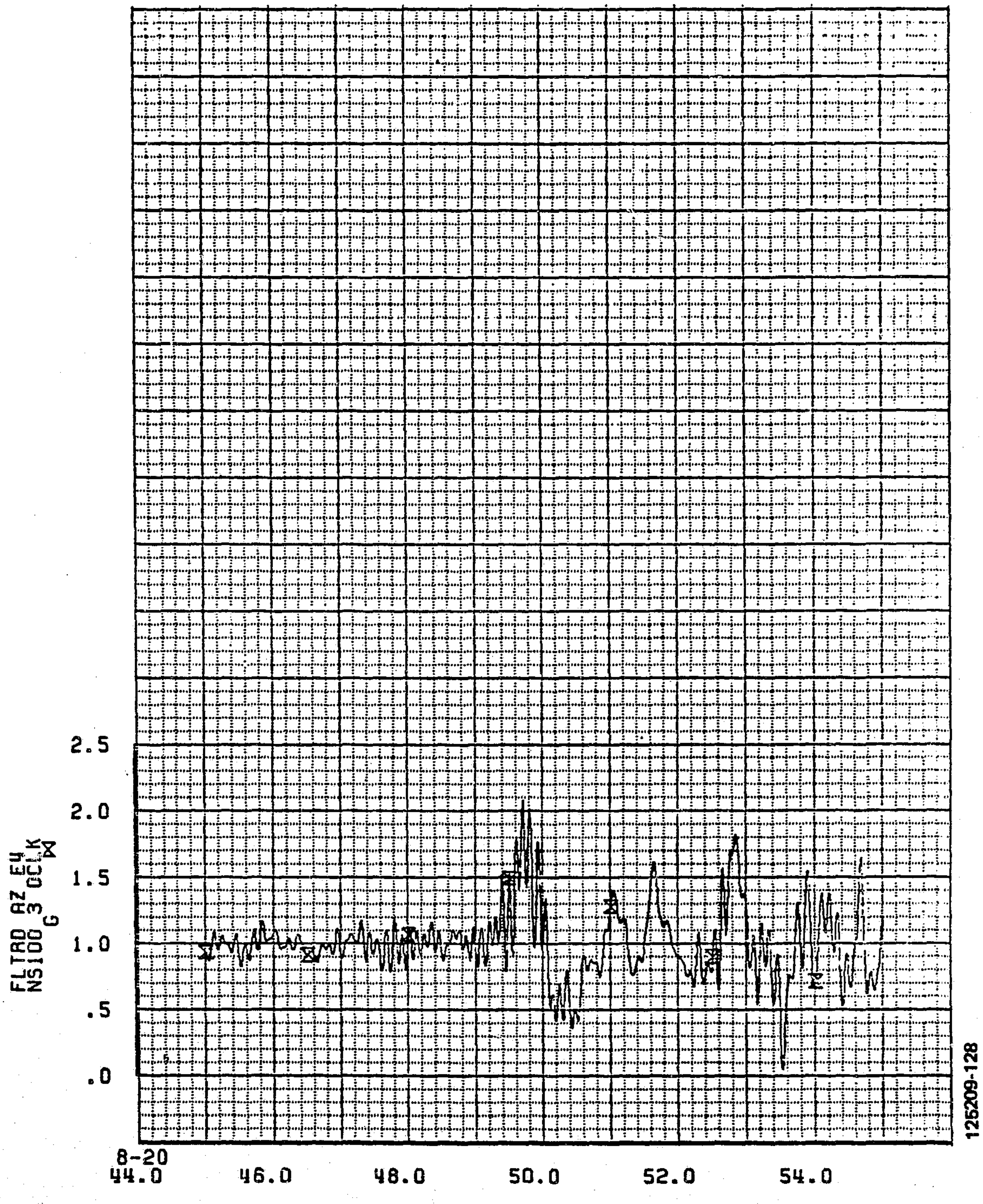


Figure A-83. Engine No. 4 Accelerations, Hard Landing (Concluded)

Table B-1. Summary of Selected Test Condition Averages

Test	Condition	Mach	Pressure altitude, m (ft)	Gross weight, kg (lbm)	Dynamic pressure, kPa (lb/in^2)	Calibrated airspeed, km/h (kn)	Alpha, deg	Free-stream total pressure, kPa (lb/in^2)
273-09	0.001	0.866	12 270 (40 256)	206 025 (454 207)	9.722 (1.410)	487.4 (263.2)	1.6	30.2051 (4.3809)
	0.002.1	0.767	12 478 (40 938)	199 759 (440 393)	7.384 (1.071)	418.7 (226.1)	3.3	26.4583 (3.8375)
	0.003	0.798	12 353 (40 528)	204 452 (450 740)	8.156 (1.183)	442.1 (238.7)	2.8	27.8258 (4.0358)
273-12	0.001.1	0.864	11 909 (39 073)	219 686 (484 325)	10.239 (1.485)	499.7 (269.8)	1.9	31.9047 (4.6274)
	0.002	0.762	12 029 (39 466)	216 516 (477 337)	7.826 (1.135)	430.4 (232.4)	3.6	28.2684 (4.1000)
	0.003	0.800	12 002 (39 376)	218 881 (482 550)	8.660 (1.256)	455.2 (245.8)	2.9	29.4584 (4.2726)
273-15	0.001	0.855	11 591 (38 028)	216 946 (478 283)	10.556 (1.531)	506.2 (273.3)	1.7	33.2491 (4.8224)
	0.002	0.776	11 596 (38 045)	218 678 (482 102)	8.694 (1.261)	454.1 (245.2)	3.0	30.6829 (4.4502)
	0.003	0.802	11 601 (38 060)	218 085 (480 796)	9.267 (1.344)	470.6 (254.1)	2.6	31.4448 (4.5607)
	0.004	0.906	11 432 (37 505)	216 125 (476 473)	12.162 (1.764)	547.1 (295.4)	1.0	36.0100 (5.2228)

125394-36

● WBL 445

COND. 1.00.137.001

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.032922	0.881700
2.0	-0.542130	1.151200
3.0	-0.703680	1.247900
5.0	-0.803810	1.312300
7.5	-0.923170	1.395000
10.0	-0.762720	1.285400
15.0	-0.769820	1.290000
20.0	-0.569560	1.167100
22.5	-0.461860	1.105800
25.0	-0.438570	1.092900
30.0	-0.492970	1.123200
35.0	-0.523020	1.140300
40.0	-0.605700	1.188300
45.0	-0.598120	1.183800
50.0	-0.660090	1.221000
52.4	-0.634160	1.205300
55.0	-0.696860	1.243600
60.0	-0.676630	1.231100
65.0	-0.551060	1.156400
70.0	-0.315080	1.026200
75.0	-0.133550	0.932320
80.0	-0.008147	0.869350

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	-0.065627	0.898070
60.0	-0.061762	0.896140
55.0	-0.057188	0.893840
50.0	-0.058936	0.894720
45.0	-0.025817	0.878160
40.0	-0.031856	0.881170
35.0	-0.039185	0.884830
30.0	-0.046008	0.888250
25.0	-0.093059	0.911870
20.0	-0.669350	1.226700
15.0	-0.417010	1.081100
10.0	-0.083081	0.906840
5.0	0.281680	0.725880
3.0	0.329210	0.702210
2.0	0.365610	0.683990
1.0	0.402580	0.665350

● WBL 470

COND. 1.00.137.001

UPPER SURFACE

X/C - %	CP	LOCAL MACH
11.0	-0.830650	1.330300
20.0	-0.478790	1.115300
30.0	-0.576850	1.171400
40.0	-0.702730	1.247300
50.0	-0.750920	1.277800
60.0	****	****

● WBL 510

COND. 1.00.137.001

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.118570	0.924740
2.0	-0.342000	1.040500
3.0	-0.484470	1.118500
5.0	-0.643450	1.210900
7.5	-0.716800	1.256100
10.0	-0.716930	1.256200
15.0	-0.688900	1.238700
22.5	-0.503650	1.129300
25.0	-0.581370	1.174000
27.5	-0.594700	1.181800
30.0	-0.602450	1.186400
35.0	-0.614510	1.193600
40.0	-0.685140	1.236400
45.0	-0.706420	1.249600
47.5	-0.719200	1.257600
50.0	-0.761100	1.284300
52.4	-0.765600	1.287300
55.0	-0.795960	1.307100
60.0	-0.864210	1.353300
65.0	-0.904410	1.381500
70.0	-0.368560	1.054800

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	-0.060707	0.895600
60.0	-0.065665	0.898080
55.0	-0.079551	0.905070
50.0	-0.096983	0.913840
45.0	-0.054096	0.892290
40.0	0.019008	0.855840
35.0	0.003575	0.863520
30.0	0.021262	0.854720
25.0	0.056514	0.837240
20.0	0.062822	0.834130
15.0	0.125940	0.802910
10.0	0.065969	0.832560
5.0	0.092377	0.819490
3.0	0.068567	0.831270
2.0	-0.057611	0.894050
1.0	-0.050702	0.890590

125209-193A

Table B-2. Tabulated Data for Test 273-09, Condition 1.00.137.001

- ENGINE 3 WL 180

COND. 1.00.137.001

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
1.7	****	****
3.3		
5.1		
7.5		
10.0		
12.8		
16.0		
21.4		
26.1		
29.6		
47.6		
65.1		
78.7	****	****

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
78.7	-0.042288	0.886380
65.1	0.026004	0.852360
47.6	0.083016	0.824120
34.9	0.018731	0.855980
29.6	-0.069922	0.900230
26.1	-0.099708	0.915210
21.4	-0.061203	0.895850
16.0	-0.126980	0.928980
12.8	-0.134500	0.932800
10.0	-0.089766	0.910190
7.5	-0.061441	0.895970
5.1	-0.042059	0.886260
3.3	0.106410	0.812560
1.7	-0.046585	0.888520

- ENGINE 3 WL 155

COND. 1.00.137.001

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.5	****	****
5.1		
7.5		
12.3		
21.5		
30.4		
39.3		
48.5	****	****
53.8	-0.189040	0.960610
57.2	****	****
62.0	-0.652670	1.216500
67.2	-0.222490	0.977820
75.9	0.015034	0.857810
82.8	0.042891	0.843990
90.0	0.056395	0.837290

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
90.0	0.083202	0.824030
82.8	0.104030	0.813730
75.9	0.055423	0.837780
67.2	0.027331	0.851710
62.0	-0.095842	0.913260
57.2	-0.195060	0.963690
53.8	-0.157720	0.944600
48.5	-0.156730	0.944100
39.3	-0.051747	0.891120
30.4	0.012763	0.858940
21.5	0.054026	0.838460
12.3	-0.172280	0.952030
7.5	-0.307810	1.022400
5.1	-0.280520	1.008000

- ENGINE 3 030 deg INLET RADIAL

COND. 1.00.137.001

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.249220	0.741990
5.0	0.376180	0.678670
3.3	0.532610	0.598530
1.3	0.881860	0.396750
0.2	1.161300	0.136860
0.0	0.754790	0.475950

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.426260	1.086100
1.1	-0.771020	1.290800
2.7	-0.656770	1.219000
5.8	-0.655870	1.218400
8.8	-0.662130	1.222300
12.5	-0.953140	1.416900
16.7	-0.966430	1.426800
21.1	-1.038500	1.482600
26.1	-0.734830	1.267500
33.5	-0.298570	1.017500
45.6	-0.362870	1.051700
57.2	-0.178100	0.955010
64.5	-0.014519	0.872530
71.8	-0.056077	0.893290
82.4	0.084840	0.823220
99.4	0.256790	0.738240

125209-194A

Table B-2. Tabulated Data for Test 273-09, Condition 1.00.137.001 (Continued)

• ENGINE 3 090 deg INLET RADIAL

COND. 1.00.137.001

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.213440	0.759690
5.0	0.307250	0.713170
3.3	0.518850	0.605710
1.3	0.788380	0.455900
0.1	****	****
0.0	0.852670	0.415850

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.295370	1.015800
1.1	-0.646790	1.212900
2.8	-0.363790	1.052200
6.1	-0.540860	1.150500
9.0	-0.652230	1.216200
12.9	-0.728380	1.263400
17.4	-0.648810	1.214200
22.7	-0.508850	1.132200
27.7	-0.479430	1.115600
34.7	-0.241710	0.987780
46.2	-0.322860	1.030300
57.5	-0.310250	1.023700
64.7	-0.155860	0.943650
71.9	-0.107370	0.919070
82.4	0.022055	0.854330
99.6	0.225930	0.753510

• ENGINE 3 150 deg INLET RADIAL

COND. 1.00.137.001

INNER SURFACE

X/C - %	CP	LOCAL MACH
9.0	0.164500	0.783870
5.2	0.341270	0.696190
3.6	0.481250	0.625210
1.5	0.813750	0.440390
0.2	1.116300	0.199820
0.0	0.861890	0.409890

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.076050	0.903300
1.2	-0.380470	1.061200
2.9	-0.306250	1.021600
6.2	-0.421970	1.083800
9.4	-0.596550	1.182900
14.5	-0.851360	1.344400
18.2	-0.847690	1.341900
22.7	-0.704930	1.248700
27.7	-0.753190	1.279300
34.5	-0.323340	1.030600
45.7	-0.248210	0.991160
57.0	-0.211380	0.972090
63.9	-0.133170	0.932130
71.0	-0.105360	0.918030
81.3	-0.003003	0.866790
99.4	0.207840	0.762460

• ENGINE 3 210 deg INLET RADIAL

COND. 1.00.137.001

INNER SURFACE

X/C - %	CP	LOCAL MACH
8.2	0.146800	0.792610
5.2	0.369760	0.681890
3.6	0.535820	0.596840
1.5	0.836390	0.426230
0.3	1.158700	0.141160
0.0	0.885170	0.394530

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.5	-0.125650	0.928320
1.2	-0.556750	1.159700
2.9	-0.322610	1.030200
6.2	-0.570030	1.167400
9.3	-0.729750	1.264300
14.4	-0.790330	1.303400
18.1	-0.706480	1.249600
22.4	-0.774600	1.293100
27.5	-0.695370	1.242700
34.2	-0.724450	1.260900
45.5	-0.231510	0.982490
56.9	-0.193300	0.962790
63.9	-0.157050	0.944260
70.8	-0.119460	0.925190
81.0	0.009189	0.860720
99.0	0.199600	0.766530

125209-195A

Table B-2. Tabulated Data for Test 273-09, Condition 1.00.137.001 (Continued)

- ENGINE 3 270 deg INLET RADIAL

COND. 1.00.137.001

INNER SURFACE

X/C - %	CP	LOCAL MACH
5.5	0.345840	0.693900
3.7	0.500710	0.615150
1.3	0.811370	0.441850
0.1	1.180700	0.098437
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.089061	0.909850
1.0	-0.778360	1.295500
2.7	-0.553980	1.158000
6.2	-0.632890	1.204500
9.0	-0.754270	1.279900
12.8	-0.908120	1.384100
17.2	-0.697250	1.243900
21.7	-0.541550	1.150900
26.6	-0.587050	1.177300
33.8	-0.564310	1.164000
45.2	-0.262050	0.998360
56.6	-0.291750	1.013900
63.9	-0.173540	0.952680
71.1	-0.136620	0.933880
81.5	0.003386	0.863610
99.0	0.190270	0.771150

- ENGINE 3 330 deg INLET RADIAL

COND. 1.00.137.001

INNER SURFACE

X/C - %	CP	LOCAL MACH
4.8	0.397600	0.667870
3.2	0.587040	0.569710
1.2	0.880040	0.397960
0.2	1.081800	0.237690
0.0	0.795940	0.451320

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.312560	1.024900
1.1	-0.857820	1.348800
2.7	-0.687080	1.237600
5.8	-0.791720	1.304300
8.8	-0.864750	1.353600
12.6	-0.676600	1.231100
17.8	-0.784060	1.299300
21.4	-0.785620	1.300300
26.1	-0.788410	1.302200
33.7	-0.604860	1.187800
45.4	-0.215810	0.974390
57.0	-0.290580	1.013300
64.5	-0.190280	0.961250
71.8	-0.116550	0.923720
82.7	0.012508	0.859080
99.4	0.165980	0.783140

125209-196A

Table B-2. Tabulated Data for Test 273-09, Condition 1.00.137.001 (Continued)

● WBL 809

COND. 1.00.137.001

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.291400	1.013700
2.0	-0.579420	1.172900
3.0	-0.740180	1.270900
5.0	-0.829670	1.329600
7.5	-1.031500	1.477100
10.0	-1.151400	1.578300
22.5	****	****
25.0	0.849000	1.342700
30.0	-0.713030	1.253700
35.0	-0.763110	1.285600
40.0	-0.610780	1.191300
45.0	-0.690310	1.239600
50.0	-0.311320	1.024200
52.4	****	****
55.0	-0.332350	1.035400
60.0	-0.347700	1.043600
65.0	-0.312140	1.024700
70.0	-0.308720	1.022900
75.0	-0.234310	0.983930
80.0	-0.163300	0.947440

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	0.078344	0.826430
60.0	0.036071	0.847370
55.0	-0.004400	0.867480
50.0	-0.053951	0.892220
45.0	-0.062316	0.896400
40.0	-0.060060	0.895270
35.0	-0.128090	0.929550
30.0	-0.376970	1.059300
25.0	-0.388760	1.065700
20.0	-0.277010	1.006200
15.0	-0.099552	0.915130
10.0	0.112030	0.809780
5.0	0.389780	0.671820
3.0	0.413190	0.659970
2.0	0.408600	0.662300
1.0	0.332940	0.700340

● WBL 834

COND.1.00.137.001

UPPER SURFACE

X/C - %	CP	LOCAL MACH
24.0	-0.960380	1.422300
30.0	-0.808740	1.315600
40.0	-0.368120	1.054500
50.0	-0.401490	1.072600
60.0	-0.340510	1.039700

● WBL 870

COND. 1.00.137.001

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.099081	0.914890
2.0	-0.218770	0.975900
10.0	-0.715060	1.255000
15.0	-0.841620	1.337700
20.0	-0.899720	1.378200
22.5	-0.818960	1.322400
25.0	-0.868220	1.356000
30.0	-0.812330	1.318000
35.0	-0.719650	1.257900
40.0	-0.408640	1.076500
45.0	-0.332960	1.035700
47.5	-0.405270	1.074600
50.0	-0.408230	1.076300
52.4	-0.427880	1.087000
55.0	-0.443430	1.095600
60.0	-0.422510	1.084100
65.0	-0.342510	1.040800
70.0	-0.255700	0.995080

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	0.041331	0.844760
60.0	0.008123	0.861250
55.0	0.004526	0.863040
50.0	0.006066	0.862270
45.0	-0.012179	0.871360
40.0	-0.011628	0.871080
35.0	-0.013479	0.872000
30.0	-0.017455	0.873980
25.0	-0.046658	0.888570
20.0	-0.024750	0.877620
15.0	-0.028691	0.879590
10.0	-0.023079	0.876790
7.5	-0.015539	0.873030
5.0	-0.028728	0.879600
3.0	-0.062171	0.896330
2.0	-0.097367	0.914020
1.0	-0.243080	0.988480

125209-197A

Table B-2. Tabulated Data for Test 273-09, Condition 1.00.137.001 (Continued)

• ENGINE 4 WL 180

COND. 1.00.137.001

INBOARD SURFACE X/C - %	CP	LOCAL MACH	OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
6.7	0.424400	0.654290	96.4	0.126660	0.802560
8.7	0.507700	0.611510	81.5	0.080734	0.825250
10.9	0.523440	0.603310	58.9	-0.018880	0.874690
14.5	0.396390	0.668480	44.2	-0.086267	0.908440
17.9	0.168110	0.782080	37.7	-0.078251	0.904400
21.6	0.068386	0.831370	33.7	-0.030939	0.880700
33.7	-0.400110	1.071800	21.6	0.042964	0.843950
37.7	-0.562480	1.163000	17.9	-0.048722	0.889600
44.2	-0.282260	1.008900	14.5	-0.117820	0.924350
58.9	0.027765	0.851480	10.9	-0.133450	0.932260
81.5	0.132020	0.799910	8.7	-0.140610	0.935890
96.4	0.190060	0.771240	6.7	-0.093808	0.912230

• ENGINE 4 WL 155

COND. 1.00.137.001

INBOARD SURFACE X/C - %	CP	LOCAL MACH	OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
1.8	-0.133430	0.932260	96.8	0.157740	0.787210
3.7	-0.131060	0.931050	89.0	0.082263	0.824490
5.5	-0.164130	0.947860	81.5	0.086387	0.822450
8.1	-0.142410	0.936820	72.2	0.015297	0.857680
13.3	0.006875	0.861870	66.6	-0.111290	0.921050
23.1	0.204310	0.764210	62.4	-0.243010	0.988450
33.1	0.368320	0.682610	57.5	-0.228580	0.980970
43.0	0.220860	0.756010	52.2	-0.149150	0.940230
52.2	-0.040135	0.885310	43.0	-0.049124	0.889800
57.5	-0.313940	1.025600	33.1	0.017518	0.856580
62.4	-0.607500	1.189400	23.1	0.061974	0.834530
66.6	-0.639380	1.208500	13.3	-0.103580	0.917150
72.2	-0.083398	0.906990	8.1	-0.251980	0.993110
81.5	0.038132	0.846350	5.5	-0.211410	0.972100
89.0	0.004983	0.862810	3.7	-0.204750	0.968680
96.8	0.167190	0.782540	1.8	-0.125210	0.928080

• ENGINE 4 030 deg CORE COWL

COND. 1.00.137.001

OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
3.6	0.311160	0.711210
15.5	0.089388	0.820970
24.0	-0.235670	0.984650
29.2	-0.265550	1.000200
37.9	-0.131970	0.931510
44.7	-0.328240	1.033200
49.9	-0.321580	1.029700
53.1	-0.571290	1.168100
57.0	-0.363570	1.052100
58.2	-0.398600	1.071000
62.7	-0.373390	1.057400
64.9	-0.546510	1.153700
68.1	-0.356830	1.048500
69.1	-0.280190	1.007800
70.2	-0.344620	1.041900
74.0	-0.345290	1.042300
77.4	-0.548680	1.155000
80.8	-0.373400	1.057400
83.8	-0.362480	1.051500
86.7	-0.360240	1.050300
90.1	-0.259740	0.997150
92.0	-0.005920	0.868240
95.4	0.028036	0.851350
99.4	0.036179	0.847320

125209-198A

Table B-2. Tabulated Data for Test 273-09, Condition 1.00.137.001 (Continued)

- ENGINE 4 060 deg INLET RADIAL

COND. 1.00.137.001

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
44.1	0.689130	0.513740	2.7	-0.843820	1.339200
32.2	****	****	6.1	-0.831640	1.331000
23.1	****	****	12.6	-0.919410	1.392300
16.6	0.304970	0.714300	17.0	-0.857110	1.348400
10.2	****	****	26.3	-0.739200	1.270300
4.9	0.400010	0.666650	32.7	-0.668600	1.226200
2.0	0.753510	0.476710	43.2	-0.218820	0.975930
0.0	0.748330	0.479740			

- ENGINE 4 180 deg INLET RADIAL

COND. 1.00.137.001

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
42.5	0.654830	0.532880	6.2	-0.625990	1.200400
31.7	0.474460	0.628700	9.5	****	****
24.4	0.296030	0.718750	13.2	-0.603580	1.187100
17.8	0.245960	0.743600	17.8	-0.610240	1.191000
11.1	0.079730	0.825750	27.2	-0.267310	1.001100
5.5	0.299620	0.716960	34.5	-0.649040	1.214300
2.4	0.675320	0.521500	45.5	-0.192420	0.962350
0.0	****	****			

- ENGINE 4 300 deg INLET RADIAL

COND. 1.00.137.001

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
42.399998	0.660870	0.529540	2.7	-0.763360	1.285800
32.200001	0.521000	0.604590	5.8	-0.637220	1.207200
22.799999	0.386720	0.673360	12.7	-0.690800	1.243600
16.400000	0.268590	0.722450	17.1	-0.722310	1.259600
9.900000	0.168660	0.781820	26.4	-0.731240	1.265200
4.700000	0.306980	0.713300	33.0	-0.767280	1.288400
2.000000	0.696780	0.509420	43.3	-0.668670	1.226300
0.000000	0.854860	0.414440			

125209-199A

Table B-2. Tabulated Data for Test 273-09, Condition 1.00.137.001 (Concluded)

● WBL 445

COND. 1.00.137.002.1

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.238530	0.868810
2.0	-1.287300	1.390000
3.0	-1.410500	1.470400
5.0	-1.425000	1.480400
7.5	-1.446300	1.495300
10.0	-1.408200	1.468800
15.0	-0.484540	0.976710
20.0	-0.593300	1.026000
22.5	-0.577550	1.018800
25.0	-0.591580	1.025200
30.0	-0.559640	1.010600
35.0	-0.563950	1.012600
40.0	-0.543020	1.003000
45.0	-0.472020	0.971110
50.0	-0.475910	0.972850
52.4	-0.438570	0.956220
55.0	-0.421530	0.948670
60.0	-0.377720	0.929370
65.0	-0.293350	0.892540
70.0	-0.214140	0.858290
75.0	-0.101070	0.809750
80.0	-0.017336	0.773900

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	-0.018042	0.774200
60.0	-0.009283	0.770460
55.0	-0.002313	0.767470
50.0	-0.011799	0.771530
45.0	0.003091	0.765150
40.0	-0.010117	0.770810
35.0	0.013295	0.760780
30.0	-0.029813	0.779240
25.0	-0.037373	0.782480
20.0	-0.062221	0.793120
15.0	-0.057297	0.791010
10.0	0.182710	0.687750
5.0	0.483830	0.552410
3.0	0.509760	0.540150
2.0	0.521640	0.534480
1.0	0.557530	0.517160

● WBL 470

COND. 1.00.137.002.1

UPPER SURFACE

X/C - %	CP	LOCAL MACH
11.0	-0.636240	1.045800
20.0	-0.695310	1.073400
30.0	-0.677520	1.065100
40.0	-0.653280	1.053700
50.0	-0.570180	1.015400
60.0	****	****

● WBL 510

COND. 1.00.137.003

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.417540	0.989140
2.0	-0.622870	1.089000
3.0	-0.793260	1.177100
5.0	-0.991310	1.288200
7.5	-1.017200	1.303600
10.0	-0.530590	1.043400
15.0	-0.636720	1.095900
22.5	-0.716160	1.136500
25.0	-0.739930	1.148900
27.5	-0.729150	1.143200
30.0	-0.720630	1.138800
35.0	-0.698860	1.127600
40.0	-0.722350	1.139700
45.0	-0.586830	1.071000
47.5	-0.609220	1.082100
50.0	-0.650890	1.103100
52.4	-0.589510	1.072300
55.0	-0.590820	1.073000
60.0	-0.508090	1.032500
65.0	-0.430520	0.995290
70.0	-0.340930	0.953180

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	-0.023110	0.808310
60.0	-0.020308	0.807050
55.0	-0.021915	0.807780
50.0	-0.042136	0.816870
45.0	-0.000627	0.798190
40.0	0.065124	0.768610
35.0	0.061601	0.770190
30.0	0.064878	0.768720
25.0	0.107820	0.749370
20.0	0.115580	0.745870
15.0	0.190530	0.711970
10.0	0.144710	0.732720
5.0	0.216200	0.700300
3.0	0.228000	0.694920
2.0	0.197680	0.708720
1.0	0.195650	0.709640

Table B-3. Tabulated Data for Test 273-09, Condition 1.00.137.002.1

125209-193B

● ENGINE 3 WL 180

COND. 1.00.137.002.1

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
1.7	****	****
3.3		
5.1		
7.5		
10.0		
12.8		
16.0		
21.4		
26.1		
29.6		
47.6		
65.1		
78.7	****	****

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
78.7	0.016448	0.759430
65.1	0.080623	0.731870
47.6	0.147650	0.702950
34.9	0.114760	0.717170
29.6	0.096452	0.725050
26.1	0.102310	0.722540
21.4	0.102420	0.722490
16.0	-0.098192	0.808510
12.8	-0.099744	0.809170
10.0	-0.088831	0.804510
7.5	-0.087912	0.804110
5.1	-0.086564	0.803540
3.3	-0.014131	0.772550
1.7	-0.097266	0.808120

● ENGINE 3 WL 155

COND. 1.00.137.002.1

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.5	****	****
5.1		
7.5		
12.3		
21.5		
30.4		
39.3		
48.5	****	****
53.8	-0.006445	0.769240
57.2	****	****
62.0	-0.128190	0.821370
67.2	-0.050701	0.788180
75.9	0.010379	0.762020
82.8	0.043096	0.748000
90.0	0.076236	0.733760

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
90.0	0.135410	0.708250
82.8	0.139220	0.706600
75.9	0.106400	0.720770
67.2	0.098889	0.724010
62.0	0.014724	0.760170
57.2	-0.036088	0.781930
53.8	-0.011741	0.771500
48.5	-0.081021	0.801160
39.3	-0.056028	0.790460
30.4	-0.045960	0.786150
21.5	0.032087	0.752720
12.3	-0.159180	0.834650
7.5	-0.283280	0.888170
5.1	-0.313300	0.901210

● ENGINE 3 030 deg INLET RADIAL

COND. 1.00.137.002.1

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.171420	0.692650
5.0	0.347100	0.615190
3.3	0.499420	0.545050
1.3	0.879070	0.340550
0.2	1.119000	0.121530
0.0	0.579850	0.506240

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.851140	1.148900
1.1	-1.229200	1.354400
2.7	-1.110000	1.285300
5.8	-0.961570	1.205100
8.8	-0.862730	1.154700
12.5	-0.752380	1.100600
16.7	-0.634030	1.044800
21.1	-0.481940	0.975540
26.1	-0.340170	0.912930
33.5	-0.363610	0.923180
45.6	-0.332330	0.909500
57.2	-0.121310	0.818420
64.5	-0.019510	0.774840
71.8	-0.003007	0.767760
82.4	0.131780	0.709820
99.4	0.279900	0.645150

Table B-3. Tabulated Data for Test 273-09, Condition 1.00.137.002.1 (Continued)

125209-194C

• ENGINE 3 090 deg INLET RADIAL

COND.1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.088145	0.758250
5.0	0.180220	0.716650
3.3	0.357410	0.635260
1.3	0.681570	0.474640
0.1	****	****
0.0	0.870320	0.364430

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.233640	0.903680
1.1	-0.483850	1.020800
2.8	-0.403150	0.982340
6.1	-0.484930	1.021300
9.0	-0.532250	1.044200
12.9	-0.566390	1.060900
17.4	-0.365520	0.964660
22.7	-0.225670	0.900030
27.7	-0.267030	0.918990
34.7	-0.245410	0.909070
46.2	-0.274290	0.922340
57.5	-0.240990	0.907040
64.7	-0.113390	0.849010
71.9	-0.068863	0.828910
82.4	0.041403	0.779280
99.6	0.228770	0.694570

• ENGINE 3 150 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
9.0	-0.035718	0.813990
5.2	0.130820	0.739000
3.6	0.265290	0.677870
1.5	0.636680	0.498400
0.2	1.054900	0.221550
0.0	0.961080	0.301440

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	0.110560	0.748140
1.2	-0.085730	0.836520
2.9	-0.185490	0.881710
6.2	-0.287710	0.928520
9.4	-0.400800	0.981230
14.5	-0.435750	0.997770
18.2	-0.465680	1 012000
22.7	-0.280350	0 925120
27.7	-0.311960	0.939730
34.5	-0.238420	0.905870
45.7	-0.198710	0.887720
57.0	-0.150830	0.865970
63.9	-0.086039	0.836660
71.0	-0.065378	0.827350
81.3	0.019150	0.789300
99.4	0.205670	0.705080

• ENGINE 3 210 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
8.2	-0.039522	0.815700
5.2	0.189480	0.712440
3.6	0.352320	0.637630
1.5	0.704070	0.462450
0.3	1.113300	0.154480
0.0	0.946700	0.312100

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.5	-0.003277	0.799390
1.2	-0.361430	0.962760
2.9	-0.292430	0.930700
6.2	-0.498410	1.027800
9.3	-0.543220	1.049500
14.4	-0.545570	1.050700
18.1	-0.428400	0.994290
22.4	-0.356300	0.960350
27.5	-0.340400	0.952940
34.2	-0.351000	0.957880
45.5	-0.251650	0.911930
56.9	-0.175770	0.877290
63.9	-0.143360	0.862580
70.8	-0.112550	0.848640
81.0	0.005742	0.795320
99.0	0.170510	0.721050

Table B-3. Tabulated Data for Test 273-09, Condition 1.00.137.002.1 (Continued)

• ENGINE 3 270 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
8.1	0.111310	0.747800
5.5	0.263920	0.678500
3.7	0.431360	0.600380
1.3	0.760470	0.430940
0.1	1.157100	0.072828
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.093312	0.839950
1.0	-0.937410	1.256900
2.7	-0.588060	1.071600
6.2	-0.900990	1.236200
9.0	-0.902000	1.236700
12.8	-0.917600	1.245500
17.2	-0.563650	1.059600
21.7	-0.303970	0.936030
26.6	-0.300740	0.934540
33.8	-0.256520	0.914160
45.2	-0.317370	0.942240
56.6	-0.339890	0.952700
63.9	-0.205740	0.890930
71.1	-0.161040	0.870590
81.5	-0.023708	0.808580
99.0	0.138070	0.735720

• ENGINE 3 330 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.5	0.260020	0.680290
4.8	0.389920	0.620020
3.2	0.598030	0.518360
1.2	0.897300	0.346660
0.2	1.053800	0.222600
0.0	0.658610	0.486880

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.643100	1.099100
1.1	-1.189700	1.413000
2.7	-1.002500	1.294900
5.8	-1.087700	1.346800
8.8	-1.139800	1.380000
12.6	-0.891460	1.230800
17.8	-0.690320	1.123200
21.4	-0.343180	0.954230
26.1	-0.319470	0.943210
33.7	-0.233920	0.903800
45.4	-0.267690	0.919300
57.0	-0.296900	0.932760
64.5	-0.191740	0.884550
71.8	-0.114690	0.849600
82.7	0.009995	0.793420
99.4	0.138790	0.735400

125209-198B

Table B-3. Tabulated Data for Test 273-09, Condition 1.00.137.002.1 (Continued)

● WBL 809

COND. 1.00.137.002.1

UPPER SURFACE X/C - %	CP	LOCAL MACH	LOWER SURFACE X/C - %	CP	LOCAL MACH
1.0	-1.248500	1.366100	65.0	0.061845	0.739950
2.0	-1.301000	1.393600	60.0	0.027753	0.754580
3.0	-1.361000	1.437200	55.0	0.001285	0.765920
5.0	-1.487700	1.524900	50.0	-0.040849	0.783970
7.5	-1.398900	1.462500	45.0	-0.020737	0.775350
10.0	-1.102400	1.281100	40.0	0.034636	0.751630
22.5	****	****	35.0	0.053805	0.743400
25.0	-0.558390	1.010000	30.0	-0.089872	0.804950
30.0	-0.506220	0.986430	25.0	-0.112830	0.814780
35.0	-0.531320	0.997750	20.0	-0.056093	0.790490
40.0	-0.490200	0.979240	15.0	0.086402	0.729390
45.0	-0.536840	1.000200	10.0	0.296650	0.637710
50.0	-0.522230	0.993650	5.0	0.564190	0.513920
52.4	-0.538340	1.000900	3.0	0.580700	0.505820
55.0	-0.457220	0.964510	2.0	0.595200	0.498640
60.0	-0.418470	0.947320	1.0	0.475680	0.556240
65.0	-0.345320	0.915170			
70.0	-0.327560	0.907420			
75.0	-0.246670	0.872330			
80.0	-0.187320	0.846750			

● WBL 834

COND. 1.00.137.002.1

UPPER SURFACE X/C - %	CP	LOCAL MACH
24.0	-0.665810	1.059600
30.0	-0.571700	1.016100
40.0	-0.599440	1.028800
50.0	-0.502410	0.984720
60.0	-0.358640	0.921000

● WBL 870

COND. 1.00.137.002.1

UPPER SURFACE X/C - %	CP	LOCAL MACH	LOWER SURFACE X/C - %	CP	LOCAL MACH
1.0	-0.490390	0.979320	65.0	0.043580	0.747790
2.0	-0.591330	1.025100	60.0	0.020521	0.757680
10.0	-1.025100	1.238700	55.0	0.035092	0.751430
15.0	-0.746940	1.098000	50.0	0.039450	0.749560
20.0	-0.696360	1.073900	45.0	0.042497	0.748260
22.5	-0.655920	1.054900	40.0	0.015200	0.759960
25.0	-0.600960	1.029500	35.0	0.023785	0.756280
30.0	-0.540980	1.002100	30.0	0.039235	0.749660
35.0	-0.560860	1.011200	25.0	0.026505	0.755110
40.0	-0.528190	0.996340	20.0	0.065343	0.738440
45.0	-0.529190	0.996780	15.0	0.106140	0.720890
47.5	-0.515090	0.990420	10.0	0.144650	0.704250
50.0	-0.551590	1.006900	7.5	0.157700	0.698600
52.4	-0.502850	0.984920	5.0	0.172930	0.692000
55.0	-0.481760	0.975460	3.0	0.182830	0.687690
60.0	-0.410860	0.943960	2.0	0.190990	0.684140
65.0	-0.331740	0.909250	1.0	0.166730	0.694690
70.0	-0.278430	0.886070			

125209-197B

Table B-3. Tabulated Data for Test 273-09, Condition 1.00.137.002.1 (Continued)

• ENGINE 4 WL 180

COND. 1.00.137.002.1

INBOARD SURFACE X/C - %	CP	LOCAL MACH	OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
6.7	0.537700	0.526760	96.4	0.135150	0.708370
8.7	0.647750	0.472130	81.5	0.092349	0.726830
10.9	0.732060	0.427510	58.9	0.037398	0.750450
14.5	0.616460	0.488020	44.2	0.038336	0.750040
17.9	0.393740	0.594090	37.7	0.074703	0.734430
21.6	0.303460	0.634690	33.7	0.144610	0.704270
33.7	-0.115470	0.815920	21.6	0.080784	0.731810
37.7	-0.135250	0.824390	17.9	-0.029950	0.779300
44.2	-0.135250	0.824390	14.5	-0.150490	0.830930
58.9	0.051403	0.744430	10.9	-0.164640	0.837000
81.5	0.169510	0.693480	8.7	-0.175040	0.841470
96.4	0.225780	0.668950	6.7	-0.159030	0.834600

• ENGINE 4 WL 155

COND. 1.00.137.002.1

INBOARD SURFACE X/C - %	CP	LOCAL MACH	OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
1.8	-0.122640	0.818990	96.8	0.171570	0.692580
3.7	-0.135580	0.824540	89.0	0.114060	0.717470
5.5	-0.131780	0.822910	81.5	0.107780	0.720180
8.1	-0.090809	0.805350	72.2	0.081042	0.731690
13.3	0.012261	0.761200	66.6	-0.020028	0.775050
23.1	0.276400	0.646690	62.4	-0.077987	0.799860
33.1	0.472290	0.557820	57.5	-0.079893	0.800680
43.0	0.365820	0.606750	52.2	-0.047594	0.786860
52.2	0.124630	0.712900	43.0	-0.033915	0.780990
57.5	-0.135160	0.824350	33.1	-0.032750	0.780500
62.4	-0.245210	0.871700	23.1	0.042780	0.748140
66.6	-0.154580	0.832690	13.3	-0.106650	0.812130
72.2	-0.070687	0.796740	8.1	-0.297100	0.894160
81.5	0.042069	0.748430	5.5	-0.271730	0.883160
89.0	0.038707	0.749880	3.7	-0.272200	0.883370
96.8	0.147980	0.702810	1.8	-0.097286	0.808120

• ENGINE 4 030 deg CORE COWL

COND. 1.00.137.002.1

OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
3.6	0.167630	0.694290
15.5	0.209140	0.676220
24.0	-0.055781	0.790350
29.2	-0.216160	0.859160
37.9	-0.109480	0.813340
44.7	-0.347630	0.916180
49.9	-0.325840	0.906670
53.1	-0.493600	0.980770
57.0	-0.366930	0.924630
58.2	-0.327730	0.907490
62.7	-0.435310	0.954780
64.9	-0.320600	0.904390
68.1	-0.195040	0.850060
69.1	-0.022038	0.775920
70.2	-0.194170	0.849680
74.0	-0.276090	0.885060
77.4	-0.358150	0.920790
80.8	-0.413840	0.945270
83.8	-0.373200	0.927380
86.7	-0.261110	0.878560
90.1	-0.152830	0.831950
92.0	-0.022806	0.776240
95.4	-0.012831	0.771970
99.4	0.014005	0.760480

Table B-3. Tabulated Data for Test 273-09, Condition 1.00.137.002.1(Continued)

125209-1988

- ENGINE 4 060 deg INLET RADIAL

COND. 1.00.137.002.1

INNER SURFACE

X/C - %	CP	LOCAL MACH
44.1	0.597620	0.497450
32.2	0.202500	0.679120
23.1	0.565020	0.513510
16.6	0.185570	0.686500
10.2	****	****
4.9	0.306650	0.633280
2.0	0.698840	0.445450
0.0	0.646000	0.473020

OUTER SURFACE

X/C - %	CP	LOCAL MACH
2.7	-1.090800	1.274600
6.1	-0.731960	1.090800
12.6	-0.557540	1.009600
17.0	-0.522040	0.993560
26.3	-0.304810	0.897520
32.7	-0.311760	0.900540
43.2	-0.257440	0.876980

- ENGINE 4 180 deg INLET RADIAL

COND. 1.00.137.002.1

INNER SURFACE

X/C - %	CP	LOCAL MACH
42.5	0.546240	0.522650
31.7	0.341760	0.617590
24.4	0.128460	0.711250
17.8	0.041857	0.748530
11.1	-0.221070	0.861280
5.5	-0.037589	0.782570
2.4	0.384740	0.598180
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
6.2	0.003431	0.765010
9.5	****	****
13.2	-0.328150	0.907680
17.8	-0.282050	0.887640
27.2	-0.061771	0.792920
34.5	-0.236240	0.867820
45.5	-0.193470	0.849390

- ENGINE 4 300 deg INLET RADIAL

COND. 1.00.137.002.1

INNER SURFACE

X/C - %	CP	LOCAL MACH
42.3	0.572340	0.509930
32.2	0.417330	0.583310
22.7	0.282550	0.643970
16.4	0.190870	0.684200
9.9	0.094521	0.725890
4.7	0.261620	0.653220
2.0	0.686060	0.452220
0.0	0.709610	0.439680

OUTER SURFACE

X/C - %	CP	LOCAL MACH
2.7	-1.152700	1.309500
5.8	-0.704110	1.077600
12.7	-0.704020	1.077600
17.1	-0.497300	0.982430
26.4	-0.487050	0.977830
33.0	-0.445960	0.959500
43.3	-0.360070	0.921630

Table B-3. Tabulated Data for Test 273-09, Condition 1.00.137.002.1 (Concluded)

125209-199B

● WBL 445

COND. 1.00.137.003

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.157630	0.869040
2.0	-0.948230	1.263100
3.0	-1.172400	1.401500
5.0	-1.275200	1.472500
7.5	-1.248700	1.453600
10.0	-1.104300	1.357300
15.0	-0.478490	1.018200
20.0	-0.446680	1.003000
22.5	-0.455470	1.007200
25.0	-0.499940	1.028500
30.0	-0.537730	1.046900
35.0	-0.615720	1.085400
40.0	-0.668130	1.111800
45.0	-0.530510	1.043300
50.0	-0.501190	1.029100
52.4	-0.434750	0.997310
55.0	-0.465490	1.012000
60.0	-0.400990	0.981320
65.0	-0.302610	0.935410
70.0	-0.221240	0.898010
75.0	-0.108620	0.846860
80.0	-0.016501	0.805340

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	-0.027317	0.810200
60.0	-0.017630	0.805840
55.0	-0.025365	0.809320
50.0	-0.018909	0.806420
45.0	-0.007371	0.801230
40.0	-0.026643	0.809900
35.0	-0.010415	0.802590
30.0	-0.052513	0.821550
25.0	-0.062428	0.826020
20.0	-0.112830	0.848770
15.0	-0.180620	0.879490
10.0	0.093805	0.755700
5.0	0.419220	0.606150
3.0	0.452420	0.590310
2.0	0.470340	0.581680
1.0	0.525640	0.554680

● WBL 470

COND. 1.00.137.003

UPPER SURFACE

X/C - %	CP	LOCAL MACH
11.0	-1.074000	1.338300
20.0	-0.591210	1.073200
30.0	-0.661650	1.108500
40.0	-0.742080	1.150000
50.0	-0.556560	1.056100
60.0	****	****

● WBL 510

COND. 1.00.137.002.1

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.567580	1.014200
2.0	-0.761230	1.104900
3.0	-0.940040	1.194000
5.0	-1.126400	1.294500
7.5	-0.744120	1.096700
10.0	-0.697920	1.074700
15.0	-0.761820	1.105200
22.5	-0.723800	1.086900
25.0	-0.771600	1.109900
27.5	-0.684090	1.068200
30.0	-0.658210	1.056000
35.0	-0.643960	1.049400
40.0	-0.655260	1.054600
45.0	-0.594980	1.026700
47.5	-0.574660	1.017400
50.0	-0.587310	1.023200
52.4	-0.570450	1.015500
55.0	-0.559830	1.010700
60.0	-0.499460	0.983400
65.0	-0.430250	0.952540
70.0	-0.346950	0.915890

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	-0.019370	0.774770
60.0	-0.016990	0.773760
55.0	-0.003751	0.768090
50.0	-0.019472	0.774820
45.0	0.009688	0.762320
40.0	0.090347	0.727690
35.0	0.066460	0.737970
30.0	0.064913	0.738630
25.0	0.114650	0.717220
20.0	0.137400	0.707390
15.0	0.220430	0.671290
10.0	0.181760	0.688160
5.0	0.258700	0.654500
3.0	0.279790	0.645190
2.0	0.267900	0.650450
1.0	0.273580	0.647940

125209-193C

Table B-4. Tabulated Data for Test 273-09, Condition 1.00.137.003

• ENGINE 3 WL 180

COND. 1.00.137.003

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
1.7	****	****
3.3		
5.1		
7.5		
10.0		
12.8		
16.0		
21.4		
26.1		
29.6		
47.6		
65.1		
78.7	****	****

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
78.7	0.008959	0.793870
65.1	0.066015	0.768200
47.6	0.127760	0.740370
34.9	0.096448	0.754500
29.6	0.044441	0.777920
26.1	0.033840	0.782680
21.4	0.069744	0.766530
16.0	-0.099267	0.842620
12.8	-0.122020	0.852910
10.0	-0.087091	0.837130
7.5	-0.084578	0.836000
5.1	-0.070677	0.829730
3.3	0.016734	0.790380
1.7	-0.080245	0.834040

• ENGINE 3 WL 155

COND. 1.00.137.003

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.5	****	****
5.1		
7.5		
12.3		
21.5		
30.4		
39.3		
48.5	****	****
53.8	-0.076400	0.832310
57.2	****	****
62.0	-0.180980	0.879650
67.2	-0.084678	0.836050
75.9	0.002909	0.796600
82.8	0.030571	0.784150
90.0	0.067392	0.767580

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
90.0	0.117120	0.745180
82.8	0.129530	0.739570
75.9	0.085078	0.759620
67.2	0.077911	0.762850
62.0	-0.022856	0.808190
57.2	-0.084501	0.835970
53.8	-0.040958	0.816340
48.5	-0.098499	0.842280
39.3	-0.054779	0.822560
30.4	-0.020517	0.807140
21.5	0.034726	0.782280
12.3	-0.166990	0.873290
7.5	-0.299840	0.934120
5.1	-0.319890	0.943400

• ENGINE 3 030 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.212970	0.701770
5.0	0.360150	0.633980
3.3	0.516910	0.558990
1.3	0.884450	0.355200
0.2	1.127100	0.134090
0.0	0.642370	0.495440

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.696620	1.126400
1.1	-1.072400	1.337300
2.7	-0.945280	1.261400
5.8	-0.893260	1.231800
8.8	-0.828880	1.196300
12.5	-1.122000	1.368600
16.7	-0.589510	1.072300
21.1	-0.433300	0.998980
26.1	-0.340300	0.952900
33.5	-0.366620	0.965180
45.6	-0.353230	0.958920
57.2	-0.139220	0.860700
64.5	-0.017359	0.805720
71.8	-0.019175	0.806540
82.4	0.115390	0.745960
99.4	0.271460	0.675040

125209-194B

Table B-4. Tabulated Data for Test 273-09, Condition 1.00.137.003 (Continued)

- ENGINE 3 090 deg INLET RADIAL

COND. 1.00.137.002.1

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.015291	0.759920
5.0	0.110860	0.718850
3.3	0.278890	0.645590
1.3	0.621090	0.485690
0.1	****	****
0.0	0.882950	0.338030

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.176810	0.842230
1.1	-0.416660	0.946520
2.8	-0.389460	0.934530
6.1	-0.437240	0.955640
9.0	-0.425370	0.950380
12.9	-0.500200	0.983730
17.4	-0.320980	0.904550
22.7	-0.199910	0.852160
27.7	-0.241720	0.870190
34.7	-0.219710	0.860690
46.2	-0.247760	0.872800
57.5	-0.211600	0.857200
64.7	-0.094622	0.806990
71.9	-0.052006	0.788740
82.4	0.051769	0.744280
99.6	0.231440	0.666470

- ENGINE 3 150 deg INLET RADIAL

COND. 1.00.137.002.1

INNER SURFACE

X/C - %	CP	LOCAL MACH
9.0	-0.129230	0.821820
5.2	0.007230	0.763380
3.6	0.139210	0.706610
1.5	0.537610	0.526810
0.2	1.014000	0.240750
0.0	1.007000	0.246750

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	0.236570	0.664230
1.2	0.027366	0.754750
2.9	-0.096224	0.807680
6.2	-0.201650	0.852910
9.4	-0.292780	0.892290
14.5	-0.329140	0.908110
18.2	-0.372150	0.926920
22.7	-0.208230	0.855750
27.7	-0.246970	0.872460
34.5	-0.185840	0.846120
45.7	-0.161360	0.835600
57.0	-0.122770	0.819040
63.9	-0.061562	0.792840
71.0	-0.045791	0.786090
81.3	0.031675	0.752900
99.4	0.208070	0.676700

- ENGINE 3 210 deg INLET RADIAL

COND. 1.00.137.002.1

INNER SURFACE

X/C - %	CP	LOCAL MACH
8.2	-0.183000	0.844890
5.2	0.094543	0.725890
3.6	0.246640	0.659800
1.5	0.612250	0.490140
0.3	1.084800	0.169220
0.0	0.997950	0.254340

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.5	0.108960	0.719680
1.2	-0.248630	0.873170
2.9	-0.246470	0.872240
6.2	-0.395700	0.937270
9.3	-0.461620	0.966470
14.4	-0.444370	0.959020
18.1	-0.356170	0.919920
22.4	-0.302580	0.896550
27.5	-0.285300	0.889040
34.2	-0.304500	0.897380
45.5	-0.223680	0.862410
56.9	-0.155130	0.832930
63.9	-0.129960	0.822130
70.8	-0.102370	0.810300
81.0	0.008038	0.763030
99.0	0.161440	0.696980

125209-195C

Table B-4. Tabulated Data for Test 273-09, Condition 1.00.137.003 (Continued)

● ENGINE 3 270 deg INLET RADIAL

COND. 1.00.137.002.1

INNER SURFACE

X/C - %	CP	LOCAL MACH
8.1	0.041149	0.748840
5.5	0.207320	0.677020
3.7	0.375130	0.602540
1.3	0.720510	0.433810
0.1	1.142700	0.072407
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.083359	0.802160
1.0	-0.877880	1.162300
2.7	-0.633830	1.044700
6.2	-1.008400	1.229800
9.0	-0.753310	1.101100
12.8	-0.776100	1.112100
17.2	-0.402780	0.940390
21.7	-0.304630	0.897440
26.6	-0.297080	0.894160
33.8	-0.249650	0.873610
45.2	-0.313390	0.901250
56.6	-0.331740	0.909250
63.9	-0.206900	0.855180
71.1	-0.165420	0.837340
81.5	-0.030081	0.779360
99.0	0.115620	0.716800

● ENGINE 3 330 deg INLET RADIAL

COND. 1.00.137.002.1

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.5	0.245470	0.660320
4.8	0.368720	0.605440
3.2	0.596640	0.497930
1.2	0.876470	0.342230
0.2	1.025600	0.230380
0.0	0.581810	0.505280

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.794750	1.121100
1.1	-1.354800	1.433100
2.7	-1.169500	1.319200
5.8	-1.221600	1.349900
8.8	-1.258700	1.372300
12.6	-0.883270	1.165000
17.8	-0.380700	0.930680
21.4	-0.341410	0.913470
26.1	-0.386730	0.933330
33.7	-0.247870	0.872850
45.4	-0.262300	0.879080
57.0	-0.281230	0.887280
64.5	-0.185290	0.845870
71.8	-0.108830	0.813070
82.7	0.012331	0.761190
99.4	0.132070	0.709700

125209-196C

Table B-4. Tabulated Data for Test 273-09, Condition 1.00.137.003 (Continued)

• WBL 809

COND. 1.00.137.003

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.850260	1.208000
2.0	-0.985520	1.284800
3.0	-1.170300	1.400100
5.0	-1.333900	1.515800
7.5	-1.416100	1.580700
10.0	-1.346400	1.525300
22.5	****	****
25.0	-0.488260	1.022900
30.0	-0.445710	1.002500
35.0	-0.500410	1.028700
40.0	-0.504850	1.030900
45.0	-0.533050	1.044600
50.0	-0.530220	1.043200
52.4	-0.533700	1.044900
55.0	-0.472910	1.015500
60.0	-0.423110	0.991770
65.0	-0.344840	0.955000
70.0	-0.317010	0.942070
75.0	-0.250510	0.911400
80.0	-0.182780	0.880470

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	0.080507	0.761670
60.0	0.033948	0.782640
55.0	-0.013210	0.803850
50.0	-0.049477	0.820170
45.0	-0.050591	0.820670
40.0	0.008324	0.794160
35.0	-0.008819	0.801870
30.0	-0.135060	0.858800
25.0	-0.174230	0.876570
20.0	-0.110780	0.847820
15.0	0.066104	0.768160
10.0	0.240710	0.689110
5.0	0.519590	0.557660
3.0	0.561720	0.536730
2.0	0.548100	0.543540
1.0	0.480370	0.576820

• WBL 834

COND. 1.00.137.003

UPPER SURFACE

X/C - %	CP	LOCAL MACH
24.0	-0.554160	1.054900
30.0	-0.591560	1.073300
40.0	-0.616530	1.085800
50.0	-0.509550	1.033200
60.0	-0.358470	0.961360

• WBL 870

COND. 1.00.137.003

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.342800	0.954050
2.0	-0.504140	1.030500
10.0	-0.935820	1.255900
15.0	-1.067800	1.334500
20.0	-0.626100	1.090600
22.5	-0.559890	1.057700
25.0	-0.607510	1.081300
30.0	-0.541790	1.048800
35.0	-0.555160	1.055400
40.0	-0.540970	1.048400
45.0	-0.531990	1.044100
47.5	-0.511670	1.034200
50.0	-0.540350	1.048100
52.4	-0.520130	1.038300
55.0	-0.480870	1.019300
60.0	-0.409110	0.985150
65.0	-0.338310	0.951970
70.0	-0.275910	0.923070

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	0.048062	0.776280
60.0	0.023065	0.787530
55.0	0.023065	0.787530
50.0	0.037430	0.781060
45.0	0.019359	0.789190
40.0	0.006776	0.794850
35.0	0.002328	0.796850
30.0	0.019647	0.789060
25.0	0.016661	0.790410
20.0	0.030343	0.784250
15.0	0.083152	0.760480
10.0	0.100230	0.752790
7.5	0.118010	0.744770
5.0	0.117060	0.745200
3.0	0.125400	0.741430
2.0	0.134490	0.737340
1.0	0.070392	0.766230

125209-197C

Table B-4. Tabulated Data for Test 273-09, Condition 1.00.137.003 (Continued)

● ENGINE 4 WL 180

COND. 1.00.137.003

INBOARD SURFACE X/C - %	CP	LOCAL MACH	OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
6.7	0.485120	0.574510	96.4	0.139290	0.735170
8.7	0.605720	0.514420	81.5	0.082051	0.760980
10.9	0.664270	0.483870	58.9	0.026337	0.786060
14.5	0.555630	0.539780	44.2	0.021778	0.788100
17.9	0.318790	0.653210	37.7	0.042064	0.778980
21.6	0.218220	0.699370	33.7	0.087693	0.758430
33.7	-0.209080	0.892440	21.6	0.064638	0.768820
37.7	-0.203590	0.889950	17.9	-0.036652	0.814400
44.2	-0.190050	0.883770	14.5	-0.123950	0.853780
58.9	0.040741	0.779570	10.9	-0.164430	0.872130
81.5	0.161330	0.725190	8.7	-0.180510	0.879430
96.4	0.199890	0.707710	6.7	-0.143270	0.862530

● ENGINE 4 WL 155

COND.1.00.137.003

INBOARD SURFACE X/C - %	CP	LOCAL MACH	OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
1.8	-0.129380	0.856240	96.8	0.173260	0.719790
3.7	-0.137060	0.859710	89.0	0.106340	0.750040
5.5	-0.185480	0.881700	81.5	0.108050	0.749270
8.1	-0.121520	0.852690	72.2	0.049884	0.775460
13.3	0.047468	0.776550	66.6	-0.036629	0.814390
23.1	0.248920	0.685360	62.4	-0.104570	0.845020
33.1	0.442410	0.595100	57.5	-0.106220	0.845770
43.0	0.318080	0.653540	52.2	-0.061861	0.825760
52.2	0.065880	0.768270	43.0	-0.058677	0.824320
57.5	-0.208650	0.892250	33.1	-0.032110	0.812350
62.4	-0.337310	0.951500	23.1	0.036080	0.781670
66.6	-0.184780	0.881380	13.3	-0.121900	0.852850
72.2	-0.086100	0.836680	8.1	-0.319530	0.943230
81.5	0.031051	0.783940	5.5	-0.280300	0.925100
89.0	0.024091	0.787060	3.7	-0.251070	0.911660
96.8	0.147490	0.731460	1.8	-0.158400	0.869390

● ENGINE 4 030 deg CORE COWL

COND. 1.00.137.003

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.206190	0.704850
15.5	0.220070	0.698520
24.0	-0.017957	0.805990
29.2	-0.170100	0.874700
37.9	-0.265530	0.918300
44.7	-0.259730	0.915640
49.9	-0.275530	0.922890
53.1	-0.383680	0.973170
57.0	-0.309040	0.938370
58.2	-0.221350	0.898050
62.7	-0.467920	1.013100
64.9	-0.609100	1.082100
68.1	-0.282350	0.926040
69.1	-0.088316	0.837680
70.2	-0.215670	0.895450
74.0	-0.252170	0.912160
77.4	-0.361350	0.962710
80.8	-0.245100	0.908920
83.8	-0.267540	0.919220
86.7	-0.232260	0.903040
90.1	-0.201320	0.888910
92.0	-0.173980	0.876470
95.4	-0.021493	0.807580
99.4	0.050793	0.775050

125209-198C

Table B-4. Tabulated Data for Test 273-09, Condition 1.00.137.003 (Continued)

• ENGINE 4 000 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
44.1	0.637390	0.498040	2.7	-1.039100	1.316800
32.2	0.247050	0.686220	6.1	-0.958430	1.269000
23.1	0.627430	0.503220	12.8	-0.898960	1.235000
16.6	0.242560	0.688270	17.0	-0.503180	1.030100
10.2	****	****	26.3	-0.305400	0.936700
4.9	0.361080	0.633540	32.7	-0.324630	0.945610
2.0	0.729410	0.448480	43.2	-0.272130	0.921340
0.0	0.673300	0.479070			

• ENGINE 4 180 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
42.5	0.594550	0.520140	6.2	-0.181930	0.830090
31.7	0.398930	0.615770	9.5	****	****
24.4	0.202290	0.706620	13.2	-0.428690	0.994420
17.8	0.129830	0.739440	17.8	-0.340120	0.952810
11.1	-0.098405	0.842240	27.2	-0.087252	0.837210
5.5	0.098632	0.753520	34.5	-0.273970	0.922180
2.4	0.506730	0.563980	45.5	-0.215380	0.895330
0.0	****	****			

• ENGINE 4 300 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
42.3	0.613730	0.510830	2.7	-1.052000	1.324700
32.2	0.467840	0.582880	5.8	-0.896150	1.233400
22.7	0.335490	0.645480	12.7	-0.839460	1.202000
16.4	0.246180	0.686620	17.1	-0.720390	1.138700
9.9	0.149470	0.730570	26.4	-0.443570	1.001500
4.7	0.302980	0.660530	33.0	-0.443790	1.001600
2.0	0.707700	0.460460	43.3	-0.363660	0.963790
0.0	0.739200	0.443000			

Table B-4. Tabulated Data for Test 273-09, Condition 1.00.137.003 (Concluded)

1-26208-199C

• WBL 445

COND. 1.00.137.001.1

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.436770	1.089100
2.0	-0.646180	1.209100
3.0	-0.814440	1.315300
5.0	-0.903750	1.376500
7.5	-1.056500	1.491700
10.0	-0.974940	1.428300
15.0	-0.876010	1.357100
20.0	-0.780080	1.292700
22.5	-0.532410	1.142500
25.0	-0.532850	1.142800
30.0	-0.563340	1.160300
35.0	-0.583610	1.172100
40.0	-0.681410	1.230500
45.0	-0.670480	1.223800
50.0	-0.720240	1.254600
52.4	-0.709440	1.247800
55.0	-0.742980	1.268900
60.0	-0.714780	1.251200
65.0	-0.484650	1.115600
70.0	-0.362280	1.048700
75.0	-0.195590	0.961640
80.0	-0.074493	0.900390

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	-0.069733	0.898010
60.0	-0.064769	0.895530
55.0	-0.064534	0.895410
50.0	-0.061955	0.894130
45.0	-0.024360	0.875370
40.0	-0.022661	0.874530
35.0	-0.029232	0.877800
30.0	-0.058116	0.892200
25.0	-0.111010	0.918720
20.0	-0.654790	1.214300
15.0	-0.404120	1.071300
10.0	-0.056587	0.891440
5.0	0.293710	0.718250
3.0	0.355480	0.687480
2.0	0.382840	0.673760
1.0	0.423660	0.653150

• WBL 470

COND. 1.00.137.001.1

UPPER SURFACE

X/C - %	CP	LOCAL MACH
11.0	-0.861390	1.347000
20.0	-0.475890	1.110700
30.0	-0.585100	1.172900
40.0	-0.711460	1.249100
50.0	-0.751530	1.274400
60.0	****	****

• WBL 510

COND. 1.00.137.001.1

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.152580	0.939730
2.0	-0.352420	1.043500
3.0	-0.422480	1.081300
5.0	-0.689420	1.235400
7.5	-0.729190	1.260200
10.0	-0.724760	1.257400
15.0	-0.720380	1.254700
20.0	-0.510910	1.130300
22.5	-0.522430	1.136900
25.0	-0.573230	1.166000
27.5	-0.588340	1.174800
30.0	-0.591260	1.176500
35.0	-0.609690	1.187400
40.0	-0.637440	1.234200
45.0	-0.722670	1.256100
47.5	-0.722510	1.256000
50.0	-0.748580	1.272500
52.4	-0.770490	1.286500
55.0	-0.796220	1.303300
60.0	-0.849380	1.338800
65.0	-0.845490	1.336200
70.0	-0.310170	1.021100

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	-0.085735	0.906030
60.0	-0.087665	0.906990
55.0	-0.096073	0.911210
50.0	-0.117500	0.921990
45.0	-0.085866	0.906090
40.0	0.004617	0.860990
35.0	-0.013098	0.869780
30.0	-0.003588	0.865060
25.0	0.046033	0.840490
20.0	0.047411	0.839800
15.0	0.127840	0.800130
10.0	0.115980	0.805970
5.0	0.079793	0.823810
3.0	0.055130	0.835990
2.0	-0.092077	0.909210
1.0	-0.053336	0.889820

125209-200A

Table B-5. Tabulated Data for Test 273-12, Condition 1.00.137.001.1

• ENGINE 3 WL 180

COND. 1.00.137.001.1

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
1.7	0.194850	0.767120
3.3	0.169450	0.779630
5.1	0.075842	0.825760
7.5	0.307230	0.711540
10.0	0.441100	0.644280
12.8	0.429720	0.650070
16.0	0.237860	0.745900
21.4	-0.119800	0.923150
26.1	-0.277020	1.003700
29.6	-0.400250	1.069200
34.9	-0.159920	0.943450
47.6	-0.043336	0.884820
65.1	0.074361	0.826490
78.7	-0.004322	0.865420

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
78.7	-0.037388	0.881860
65.1	0.040597	0.843160
47.6	0.085557	0.820970
34.9	0.015797	0.855440
29.6	-0.054524	0.890400
26.1	-0.092960	0.909640
21.4	-0.048975	0.887630
16.0	-0.139500	0.933090
12.8	-0.139630	0.933170
10.0	-0.089952	0.908140
7.5	-0.060825	0.893550
5.1	-0.043149	0.884730
3.3	0.101520	0.813100
1.7	-0.049651	0.887970

• ENGINE 3 WL 155

COND 1.00.137.001.1

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
7.5	-0.025014	0.875700
12.3	-0.027447	0.876910
21.5	0.143360	0.792480
30.4	0.277330	0.726350
39.3	0.167960	0.780370
48.5	0.024269	0.851240
53.8	-0.168840	0.947980
57.2	****	****
62.0	-0.637240	1.203800
67.2	-0.177650	0.952470
75.9	0.016646	0.855020
82.8	0.042535	0.842210
90.0	0.059533	0.833810

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
90.0	0.088895	0.819320
82.8	0.109490	0.809170
75.9	0.054394	0.836340
67.2	0.041190	0.842870
62.0	-0.086715	0.906510
57.2	-0.174970	0.951110
53.8	-0.151910	0.939380
48.5	-0.169580	0.948360
39.3	-0.057260	0.891770
30.4	0.010574	0.858030
21.5	0.060458	0.833350
12.3	-0.158330	0.942650
7.5	-0.301080	1.016300
5.1	-0.267360	0.998650

• ENGINE 3 030 deg CORE COWL

COND. 1.00.137.001.1

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.391190	0.669560
24.0	-0.042404	0.884360
29.2	-0.133750	0.930200
37.9	-0.264500	0.997170
44.7	-0.007193	0.866840
49.9	-0.215360	0.971770
53.1	-0.211440	0.969760
57.0	-0.363520	1.049400
58.2	-0.427490	1.084000
62.7	-0.517430	1.134000
64.9	-0.462750	1.103400
68.1	-0.490570	1.118900
69.1	-0.440750	1.091300
70.2	-0.389990	1.063600
74.0	-0.472990	1.109100
77.4	-0.497000	1.122500
80.8	-0.363680	1.049500
83.8	-0.324950	1.028900
86.7	-0.344700	1.039300
90.1	-0.186310	0.956890
92.0	0.033046	0.846900
95.4	0.052636	0.837210
99.4	0.064332	0.831440

125209-201A

Table B-5. Tabulated Data for Test 273-12, Condition 1.00.137.001.1 (Continued)

• ENGINE 3 030 deg INLET RADIAL

COND. 1.00.137.001.1

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.377880	0.676250
5.0	0.579980	0.572100
3.3	0.763570	0.469500
1.3	****	****
0.2	****	****
0.0	1.158500	0.139670

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.143770	0.935260
1.1	-0.680650	1.230000
2.7	-0.655640	1.214800
5.8	-0.654900	1.214400
8.8	-0.663250	1.219400
12.5	-0.964720	1.420700
16.7	-0.959930	1.417200
21.1	-1.044000	1.481700
26.1	-0.723650	1.256700
33.5	-0.277700	1.004000
45.6	-0.366960	1.051200
57.2	-0.173270	0.950240
64.5	-0.013416	0.869940
71.8	-0.049993	0.888140
82.4	0.089307	0.819120
99.4	0.033841	0.846510

• ENGINE 3 090 deg INLET RADIAL

COND. 1.00.137.001.1

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.296510	0.716870
5.0	0.482400	0.623150
3.3	0.746840	0.479350
1.3	1.093400	0.224150
0.1	****	****
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.028420	0.877390
1.1	-0.469850	1.107300
2.8	-0.303310	1.017500
6.1	-0.538790	1.146200
9.0	-0.628850	1.198700
12.9	-0.700920	1.242500
17.4	-0.620020	1.193500
22.7	-0.502940	1.125800
27.7	-0.471470	1.108200
34.7	-0.275120	1.002700
46.2	-0.335940	1.034700
57.5	-0.308280	1.020100
64.7	-0.153160	0.940010
71.9	-0.105180	0.915780
82.4	0.024845	0.850960
99.6	0.040024	0.843450

• ENGINE 3 150 deg INLET RADIAL

COND. 1.00.137.001.1

INNER SURFACE

X/C - %	CP	LOCAL MACH
9.0	0.245000	0.742340
5.2	0.430440	0.649700
3.6	0.596560	0.563240
1.5	0.967010	0.335410
0.2	****	****
0.0	1.053400	0.263780

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	0.047612	0.839700
1.2	-0.241330	0.985410
2.9	-0.278230	1.004300
6.2	-0.449490	1.096100
9.4	-0.582700	1.171500
14.5	-0.839260	1.331900
18.2	-0.765790	1.283500
22.7	-0.700270	1.242100
27.7	-0.723920	1.256900
34.5	-0.272880	1.001500
45.7	-0.263090	0.996440
57.0	-0.213180	0.970650
63.9	-0.131420	0.929010
71.0	-0.106960	0.916680
81.3	0.038337	0.844290
99.4	0.037813	0.844540

Table B-5. Tabulated Data for Test 273-12, Condition 1.00.137.001.1 (Continued)

125209-202A

• ENGINE 3 210 deg INLET RADIAL

COND. 1.00.137.001.1

INNER SURFACE

X/C - %	CP	LOCAL MACH
8.2	0.338370	0.696030
5.2	0.566790	0.579110
3.6	0.773580	0.463550
1.5	1.147500	0.157010
0.3	****	****
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.5	0.200590	0.764290
1.2	-0.354870	1.044800
2.9	-0.305160	1.018400
6.2	-0.608460	1.186600
9.3	-0.726900	1.258800
14.4	-0.764920	1.282900
18.1	-0.679980	1.229600
22.4	-0.761570	1.280800
27.5	-0.674490	1.226300
34.2	-0.715430	1.251600
45.5	-0.252490	0.990930
56.9	-0.197580	0.962650
63.9	-0.158790	0.942880
70.8	-0.121320	0.923910
81.0	0.005241	0.860670
99.0	0.041352	0.842790

• ENGINE 3 270 deg INLET RADIAL

COND. 1.00.137.001.1

INNER SURFACE

X/C - %	CP	LOCAL MACH
8.1	0.322060	0.704160
5.5	0.545560	0.590300
3.7	0.731330	0.488370
1.3	1.180100	0.097380
0.1	****	****
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.080835	0.903560
1.0	-0.664470	1.220200
2.7	-0.535080	1.144100
6.2	-0.682730	1.231300
9.0	-0.771680	1.287300
12.8	-0.875330	1.356600
17.2	-0.697340	1.240300
21.7	-0.557250	1.156800
26.6	-0.591200	1.176500
33.8	-0.569440	1.163800
45.2	-0.237660	0.983260
56.6	-0.308760	1.020300
63.9	-0.177680	0.952480
71.1	-0.140680	0.933690
81.5	0.002277	0.862140
99.0	0.038673	0.844120

• ENGINE 3 330 deg INLET RADIAL

COND. 1.00.137.001.1

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.5	0.409710	0.660200
4.8	0.592910	0.565190
3.2	0.802060	0.446340
1.2	****	****
0.2	****	****
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.014749	0.870590
1.1	-0.756520	1.277500
2.7	-0.652030	1.212600
5.8	-0.784240	1.295400
8.8	-0.894490	1.370000
12.6	-0.693410	1.237900
17.8	-0.801450	1.306700
21.4	-0.817490	1.317300
26.1	-0.813770	1.314900
33.7	-0.617730	1.192100
45.4	-0.213940	0.971040
57.0	-0.299290	1.015300
64.5	-0.190870	0.959220
71.8	-0.119220	0.922850
82.7	0.012953	0.856850
99.4	0.031769	0.847530

125209-203A

Table B-5. Tabulated Data for Test 273-12, Condition 1.00.137.001.1 (Continued)

● WBL 809

COND. 1.00.137.001.1
UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.327320	1.030100
2.0	-0.661410	1.218300
3.0	-0.790090	1.299300
5.0	-0.865980	1.350100
7.5	-1.066100	1.499500
10.0	-1.183600	1.601100
15.0	-0.915120	1.384600
20.0	-0.760970	1.280400
22.5	-0.747880	1.272000
25.0	-0.881020	1.360600
30.0	-0.668500	1.222600
35.0	-0.751070	1.274100
40.0	-0.603690	1.183800
45.0	-0.328160	1.030600
50.0	-0.338180	1.035900
52.4	-0.400030	1.069000
55.0	-0.363910	1.049600
60.0	-0.370950	1.053400
65.0	-0.320590	1.026600
70.0	-0.324720	1.028700
75.0	-0.243540	0.986290
80.0	-0.173800	0.950500

● WBL 834

COND. 1.00.137.001.1
UPPER SURFACE

X/C - %	CP	LOCAL MACH
12.0	-0.900550	1.374200
24.0	-0.981500	1.433300
30.0	-0.789250	1.298700
40.0	-0.368210	1.051900
50.0	-0.430580	1.085700
60.0	-0.353860	1.044200

● WBL 870

COND. 1.00.137.001.1
UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.008217	0.867340
2.0	-0.237310	0.983070
3.0	-0.335590	1.034500
5.0	-0.487530	1.117200
7.5	-0.732720	1.262400
10.0	-0.819930	1.319000
15.0	-0.856000	1.343300
20.0	-0.903810	1.376500
22.5	-0.824040	1.321700
25.0	-0.857200	1.344100
30.0	-0.792480	1.300800
35.0	-0.608780	1.186800
40.0	-0.330230	1.031700
45.0	-0.375280	1.055700
47.5	-0.439320	1.090500
50.0	-0.435750	1.088500
52.4	-0.438090	1.089800
55.0	-0.461100	1.102500
60.0	-0.450460	1.096600
65.0	-0.338800	1.036200
70.0	-0.258750	0.994170

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	0.022772	0.851980
60.0	-0.013785	0.870110
55.0	-0.003284	0.864890
50.0	-0.006047	0.866270
45.0	-0.020630	0.873510
40.0	-0.034660	0.880490
35.0	-0.050042	0.888160
30.0	-0.041332	0.883810
25.0	-0.057219	0.891750
20.0	-0.048916	0.887600
15.0	-0.031466	0.878900
10.0	0.003940	0.861310
7.5	0.001255	0.862650
5.0	-0.055237	0.890760
3.0	-0.087213	0.906760
2.0	-0.110510	0.918460
1.0	-0.255830	0.992660

125209-204A

Table B-5. Tabulated Data for Test 273-12, Condition 1.00.137.001.1 (Continued)

• ENGINE 4 WL 180

COND. 1.00.137.001.1

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
6.7	0.411200	0.659460
8.7	0.494170	0.617070
10.9	0.501610	0.613230
14.5	0.379350	0.675510
17.9	0.147280	0.790550
21.6	0.026942	0.849930
28.4	-0.183350	0.955370
33.7	-0.449380	1.096000
37.7	-0.585990	1.173400
44.2	-0.328860	1.030900
58.9	-0.010927	0.868690
81.5	0.113380	0.807240
96.4	0.163550	0.782540

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
96.4	0.132160	0.797990
81.5	0.097082	0.815280
58.9	0.019498	0.853600
44.2	-0.078189	0.902230
37.7	-0.082985	0.904640
33.7	-0.057013	0.891640
28.4	0.016275	0.855190
21.6	0.044451	0.841260
17.9	0.038337	0.844280
14.5	-0.051665	0.888970
10.9	-0.132860	0.929740
8.7	-0.143150	0.934940
6.7	-0.087373	0.906830
4.7	-0.055752	0.891010

• ENGINE 4 WL 155

COND. 1.00.137.001.1

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
1.8	-0.151410	0.939130
3.7	-0.157090	0.942000
5.5	-0.181880	0.954620
8.1	-0.182770	0.955070
13.3	-0.024478	0.875430
23.1	0.184970	0.771980
33.1	0.358700	0.685860
43.0	0.188030	0.770470
52.2	-0.066242	0.896260
57.5	-0.314890	1.023600
62.4	-0.612280	1.188900
66.6	-0.636190	1.203100
72.2	-0.092874	0.909600
81.5	0.042563	0.842180
89.0	0.012488	0.857070
96.8	0.164640	0.781990

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
96.8	0.148610	0.789890
89.0	0.087925	0.819790
81.5	0.072864	0.827220
72.2	0.013538	0.856550
66.6	-0.117380	0.921920
62.4	-0.231180	0.979910
57.5	-0.244880	0.986990
52.2	-0.153130	0.940000
43.0	-0.049866	0.888070
33.1	0.014529	0.856060
23.1	0.074567	0.826380
13.3	-0.084786	0.905540
8.1	-0.273380	1.001800
5.5	-0.222930	0.975660
3.7	-0.208340	0.968160
1.8	-0.185370	0.956400

125209-205A

Table B-5. Tabulated Data for Test 273-12, Condition 1.00.137.001.1 (Continued)

● ENGINE 4 060 deg INLET RADIAL

COND. 1.00.137.001.1

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
44.1	0.679220	0.518000	2.7	-0.834200	1.328500
32.2	****	****	6.1	-0.820000	1.319000
23.1	****	****	12.6	-0.900070	1.373900
16.6	0.342840	0.693800	17.0	-0.862010	1.347400
10.2	****	****	26.3	-0.725820	1.258100
4.9	0.412750	0.658670	32.7	-0.569790	1.164000
2.0	0.746950	0.479290	43.2	-0.235830	0.982310
0.0	0.817670	0.436720			

● ENGINE 4 180 deg INLET RADIAL

COND. 1.00.137.001.1

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
42.5	0.687850	0.513160	6.2	-0.524910	1.138300
31.7	0.503200	0.612410	9.5	-0.564500	1.161000
24.4	0.279880	0.725120	13.2	-0.599380	1.181300
17.8	0.234320	0.747650	17.8	-0.616890	1.191600
11.1	0.112710	0.807580	27.2	-0.269540	0.999790
5.5	0.280460	0.724830	34.5	-0.648210	1.210300
2.4	****	****	45.5	-0.202660	0.965250
0.0	****	****			

● ENGINE 4 300 deg INLET RADIAL

COND. 1.00.137.001.1

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
42.3	0.680720	0.517160	2.7	-0.775910	1.290000
32.2	0.540870	0.592770	5.8	-0.636240	1.203200
22.7	0.370770	0.679820	12.7	-0.701600	1.243000
16.4	0.271440	0.729290	17.1	-0.728820	1.260000
9.9	0.151140	0.788660	26.4	-0.736040	1.264500
4.7	0.288490	0.720840	33.0	-0.771700	1.287300
2.0	0.684810	0.514870	43.3	-0.669410	1.223200
0.0	0.861020	0.409220			

125209-20SA

Table B-5. Tabulated Data for Test 273-12, Condition 1.00.137.001.1 (Concluded)

● WBL 445

COND. 1.00.137.002

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-1.174700	1.310400
2.0	-1.482300	1.504600
3.0	-1.618400	1.606800
5.0	-1.648200	1.631100
7.5	-1.559500	1.560900
10.0	-0.941880	1.185400
15.0	-0.632290	1.036500
20.0	-0.668820	1.053300
22.5	-0.662730	1.050500
25.0	-0.665460	1.051800
30.0	-0.656830	1.047800
35.0	-0.630940	1.035900
40.0	-0.646050	1.042800
45.0	-0.574000	1.010000
50.0	-0.543560	0.996320
52.4	-0.522360	0.986840
55.0	-0.515100	0.983590
60.0	-0.464060	0.960970
65.0	-0.375320	0.922140
70.0	-0.305620	0.892000
75.0	-0.188250	0.841720
80.0	-0.098917	0.803730

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	-0.023016	0.771490
60.0	-0.018421	0.769540
55.0	-0.019294	0.769910
50.0	-0.013287	0.767350
45.0	-0.002588	0.762810
40.0	0.000135	0.761650
35.0	0.011390	0.756860
30.0	-0.026838	0.773110
25.0	-0.039609	0.778540
20.0	-0.053812	0.784570
15.0	-0.053714	0.784530
10.0	0.202540	0.674950
5.0	0.481600	0.550010
3.0	0.513390	0.535030
2.0	0.541660	0.521540
1.0	0.564940	0.510280

● WBL 470

COND 1.00.137.002

UPPER SURFACE

X/C - %	CP	LOCAL MACH
11.0	-0.660760	1.049600
20.0	-0.694670	1.065300
30.0	-0.647470	1.043500
40.0	-0.646010	1.042800
50.0	-0.559250	1.003400
60.0	****	****

● WBL 510

COND. 1.00.137.002

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.620380	1.031100
2.0	-0.783740	1.107400
3.0	-0.962510	1.195900
5.0	-1.154600	1.299100
7.5	-0.793780	1.112200
10.0	-0.711970	1.073400
15.0	-0.781820	1.106500
20.0	-0.789410	1.110100
22.5	-0.743480	1.088200
25.0	-0.761640	1.096800
27.5	-0.683800	1.060300
30.0	-0.640320	1.040200
35.0	-0.619230	1.030500
40.0	-0.655960	1.047400
45.0	-0.607730	1.025300
47.5	-0.571220	1.008800
50.0	-0.584720	1.014900
52.4	-0.554740	1.001300
55.0	-0.548740	0.998650
60.0	-0.488140	0.971620
65.0	-0.411400	0.937860
70.0	-0.315210	0.896120

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	-0.035414	0.776760
60.0	-0.032219	0.775400
55.0	-0.051597	0.783640
50.0	-0.077838	0.794780
45.0	0.000134	0.761650
40.0	0.087159	0.724570
35.0	0.050288	0.740310
30.0	0.059031	0.736580
25.0	0.092049	0.722480
20.0	0.099099	0.719460
15.0	0.207110	0.672970
10.0	0.225540	0.664960
5.0	0.252160	0.653350
3.0	0.261000	0.649480
2.0	0.255450	0.651910
1.0	0.267310	0.646720

125209-200C

Table B-6. Tabulated Data for Test 273-12, Condition 1.00.137.002

● ENGINE 3WL 180

COND. 1.00.137.002

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
1.7	0.119990	0.710510
3.3	0.092872	0.722120
5.1	0.221770	0.666600
7.5	0.268080	0.646370
10.0	0.511660	0.535840
12.8	0.610690	0.487740
16.0	0.500890	0.540930
21.4	0.166710	0.690430
26.1	0.022785	0.752020
29.6	0.019428	0.753440
34.9	0.046659	0.741850
47.6	0.030199	0.748860
65.1	0.136450	0.703450
78.7	0.097242	0.720250

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
78.7	0.022723	0.752040
65.1	0.100450	0.718880
47.6	0.162530	0.692220
34.9	0.129270	0.706530
29.6	0.123820	0.708870
26.1	0.110930	0.714400
21.4	0.134360	0.704340
16.0	-0.098617	0.803600
12.8	-0.112670	0.809560
10.0	-0.089867	0.799880
7.5	-0.089391	0.799680
5.1	-0.089679	0.799790
3.3	-0.036360	0.777150
1.7	-0.101840	0.804960

● ENGINE 3WL 155

COND. 1.00.137.002

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
7.5	0.077332	0.728760
12.3	0.080273	0.727500
21.5	0.234460	0.661070
30.4	0.371800	0.600320
39.3	0.309630	0.628070
48.5	0.204090	0.674270
53.8	0.027839	0.749860
57.2	****	****
62.0	-0.102050	0.805050
67.2	-0.042492	0.779760
75.9	0.029771	0.749030
82.8	0.053541	0.738910
90.0	0.083608	0.726080

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
90.0	0.138700	0.702480
82.8	0.148210	0.698400
75.9	0.110270	0.714670
67.2	0.115030	0.712630
62.0	0.026573	0.750400
57.2	-0.022020	0.771070
53.8	-0.005914	0.764220
48.5	-0.075255	0.793670
39.3	-0.058406	0.786520
30.4	-0.028718	0.773910
21.5	0.037805	0.745620
12.3	-0.142140	0.822090
7.5	-0.287140	0.884040
5.1	-0.302320	0.890560

● ENGINE 3 030 deg CORE COWL

COND. 1.00.137.002

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.258430	0.650610
24.0	-0.012016	0.766810
29.2	-0.224710	0.857280
37.9	-0.260510	0.872600
44.7	-0.025260	0.772440
49.9	-0.365840	0.918020
53.1	-0.073429	0.792890
57.0	-0.479730	0.967900
58.2	-0.345920	0.909380
62.7	-0.383090	0.925510
64.9	-0.555610	1.001700
68.1	-0.317440	0.897080
69.1	-0.074118	0.793200
70.2	-0.091740	0.800670
74.0	-0.127140	0.815710
77.4	-0.326060	0.900800
80.8	-0.233180	0.860900
83.8	-0.335530	0.904890
86.7	-0.222780	0.856460
90.1	-0.171920	0.834770
92.0	-0.084736	0.797700
95.4	0.106260	0.716390
99.4	0.046539	0.741900

Table B-6. Tabulated Data for Test 273-12, Condition 1.00.137.002 (Continued)

125209-201B

• ENGINE 3 030 deg INLET RADIAL

COND. 1.00.137.002

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.345580	0.612100
5.0	0.598260	0.493930
3.3	0.797070	0.388000
1.3	****	****
0.2	****	****
0.0	1.121800	0.112830

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.477080	0.966730
1.1	-1.096700	1.266900
2.7	-1.064700	1.249500
5.8	-0.862380	1.145600
8.8	-0.862960	1.145900
12.5	-0.771430	1.101500
16.7	-0.633110	1.036900
21.1	-0.482290	0.969030
26.1	-0.342740	0.908010
33.5	-0.357920	0.914580
45.6	-0.324430	0.900100
57.2	-0.115920	0.810950
64.5	-0.018005	0.769360
71.8	0.003964	0.760020
82.4	0.138150	0.702730
99.4	0.047249	0.741600

• ENGINE 3 090 deg INLET RADIAL

COND. 1.00.137.002

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.111350	0.714220
5.0	0.294360	0.634820
3.3	0.522840	0.530540
1.3	0.990770	0.257520
0.1	****	****
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	0.220450	0.667190
1.1	-0.160870	0.830070
2.8	-0.229970	0.859540
6.1	-0.389610	0.928360
9.0	-0.390680	0.928820
12.9	-0.468520	0.962940
17.4	-0.297280	0.888400
22.7	-0.187140	0.841250
27.7	-0.228150	0.858760
34.7	-0.227710	0.858570
46.2	-0.246000	0.866400
57.5	-0.205570	0.849120
64.7	-0.088267	0.799210
71.9	-0.048913	0.782490
82.4	0.054221	0.738630
99.6	0.054513	0.738510

• ENGINE 3 150 deg INLET RADIAL

COND. 1.00.137.002

INNER SURFACE

X/C - %	CP	LOCAL MACH
9.0	-0.042274	0.779670
5.2	0.130500	0.706000
3.6	0.254180	0.652470
1.5	0.701410	0.441070
0.2	****	****
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	0.438460	0.570010
1.2	0.159270	0.693640
2.9	-0.010334	0.766100
6.2	-0.158150	0.828910
9.4	-0.240120	0.867730
14.5	-0.284550	0.882930
18.2	-0.275700	0.879120
22.7	-0.179390	0.837960
27.7	-0.227960	0.858080
34.5	-0.171560	0.834620
45.7	-0.151820	0.826220
57.0	-0.114340	0.810280
63.9	-0.054874	0.785020
71.0	-0.040106	0.778750
81.3	0.052094	0.739530
99.4	0.055731	0.737990

125209-202B

Table B-6. Tabulated Data for Test 273-12, Condition 1.00.137.002 (Continued)

• ENGINE 3 210 deg INLET RADIAL

COND. 1.00.137.002

INNER SURFACE

X/C - %	CP	LOCAL MACH
8.2	0.014127	0.755690
5.2	0.294140	0.634920
3.6	0.532500	0.525920
1.5	0.978740	0.267150
0.3	****	****
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.5	-0.554100	0.515540
1.2	0.001699	0.760980
2.9	-0.128340	0.816230
6.2	-0.415910	0.939840
9.3	-0.440450	0.950580
14.4	-0.409700	0.937120
18.1	-0.326670	0.901070
22.4	-0.281850	0.881770
27.5	-0.270910	0.877070
34.2	-0.295850	0.887780
45.5	-0.221670	0.856000
56.9	-0.152570	0.826540
63.9	-0.127940	0.816070
70.8	-0.100960	0.804600
81.0	0.005564	0.759340
99.0	0.055849	0.737940

• ENGINE 3 270 deg INLET RADIAL

COND. 1.00.137.002

INNER SURFACE

X/C - %	CP	LOCAL MACH
8.1	0.227060	0.664300
5.5	0.458780	0.560640
3.7	0.669730	0.457710
1.3	****	****
0.1	****	****
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.033563	0.775970
1.0	-0.648280	1.043800
2.7	-0.555330	1.001600
6.2	-1.057900	1.245900
9.0	-0.768320	1.100000
12.8	-0.686780	1.061700
17.2	-0.388600	0.927920
21.7	-0.305600	0.891980
26.6	-0.297620	0.888550
33.8	-0.249880	0.868060
45.2	-0.308430	0.893200
56.6	-0.331550	0.903170
63.9	-0.208240	0.850260
71.1	-0.168040	0.833120
81.5	-0.030297	0.774580
99.0	0.052961	0.739160

• ENGINE 3 330 deg INLET RADIAL

COND. 1.00.137.002

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.5	0.437540	0.570430
4.8	0.631470	0.477310
3.2	0.879380	0.337600
1.2	****	****
0.2	****	****
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.386900	0.927170
1.1	-1.197400	1.323500
2.7	-1.104200	1.271000
5.8	-1.184500	1.316000
8.8	-1.277200	1.370600
12.6	-0.700080	1.067800
17.8	-0.386100	0.926830
21.4	-0.354470	0.913090
26.1	-0.394690	0.930570
33.7	-0.253090	0.869430
45.4	-0.257950	0.871510
57.0	-0.282200	0.881920
64.5	-0.182710	0.839370
71.8	-0.107680	0.807450
82.7	0.014124	0.755700
99.4	0.044640	0.742710

125209-203B

Table B-6. Tabulated Data for Test 273-12, Condition 1.00.137.002 (Continued)

● WBL 809

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-1.363600	1.424600
2.0	-1.409500	1.454700
3.0	-1.473800	1.498600
5.0	-1.496200	1.514400
7.5	-1.296300	1.382300
10.0	-1.130500	1.285500
15.0	-0.933410	1.181100
20.0	-0.747260	1.090000
22.5	-0.384970	0.926340
25.0	-0.602460	1.022900
30.0	-0.502880	0.978160
35.0	-0.536620	0.993200
40.0	-0.500730	0.977200
45.0	-0.542010	0.995610
50.0	-0.514860	0.983490
52.5	-0.509550	0.981130
55.0	-0.469290	0.963280
60.0	-0.429430	0.945750
65.0	-0.349040	0.910730
70.0	-0.326430	0.900950
75.0	-0.255000	0.870240
80.0	-0.188720	0.841930
52.4	-0.509550	0.981130
55.0	-0.469290	0.963280
60.0	-0.429430	0.945750
65.0	-0.349040	0.910730
70.0	-0.326430	0.900950
75.0	-0.255000	0.870240
80.0	-0.188720	0.841930

● WBL 834

COND. 1.00.137.002

UPPER SURFACE

X/C - %	CP	LOCAL MACH
12.0	-0.868970	1.148800
24.0	-0.671960	1.054800
30.0	-0.588290	1.016500
40.0	-0.574490	1.010200
50.0	-0.512280	0.982330
60.0	-0.365560	0.917890

● WBL 870

COND. 1.00.137.002

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.414130	0.939050
2.0	-0.583110	1.014100
3.0	-0.673330	1.055400
5.0	-0.837340	1.133300
7.5	-1.070900	1.252900
10.0	-1.167300	1.306200
15.0	-0.743060	1.088000
20.0	-0.745230	1.089100
22.5	-0.657700	1.048200
25.0	-0.602390	1.022900
30.0	-0.537810	0.993730
35.0	-0.567120	1.006900
40.0	-0.535180	0.992560
45.0	-0.525790	0.988360
47.5	-0.515340	0.983700
50.0	-0.534630	0.992310
52.4	-0.485890	0.970630
55.0	-0.474470	0.965570
60.0	-0.408860	0.936750

UPPER SURFACE

X/C - %	CP	LOCAL MACH
65.0	-0.326860	0.901140
70.0	-0.280380	0.881130

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	0.019113	0.753570
60.0	0.005360	0.759430
55.0	0.012093	0.756550
50.0	0.018231	0.753940
45.0	-0.000563	0.761940
40.0	-0.000777	0.762030
35.0	0.001211	0.761190
30.0	0.012786	0.756270
25.0	0.000031	0.761680
20.0	0.033774	0.747340
15.0	0.074420	0.730010
10.0	0.130250	0.706110
7.5	0.141240	0.701390
5.0	0.144510	0.699990
3.0	0.158740	0.693870
2.0	0.155970	0.695050
1.0	0.136310	0.703510

125209-204B

Table B-6. Tabulated Data for Test 273-12, Condition 1.00.137.002 (Continued)

● ENGINE 4 WL 180

COND. 1.00.137.002

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
6.7	0.474980	0.553090
8.7	0.607320	0.489420
10.9	0.682740	0.450920
14.5	0.582820	0.501540
17.9	0.347090	0.611410
21.6	0.260110	0.649870
28.4	0.002351	0.760700
33.7	-0.162500	0.830760
37.7	-0.191060	0.842920
44.2	-0.188000	0.841620
58.9	0.020630	0.752920
81.5	0.148530	0.698260
96.4	0.176590	0.686160

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
96.4	0.141480	0.701280
81.5	0.135860	0.703710
58.9	0.040545	0.744450
44.2	0.029798	0.749020
37.7	0.041293	0.744130
33.7	0.108400	0.715470
28.4	0.166350	0.690580
21.6	0.161360	0.692730
17.9	0.067779	0.732840
14.5	-0.045905	0.781210
10.9	-0.188030	0.841620
8.7	-0.191520	0.843120
6.7	-0.172180	0.834880
4.7	-0.150250	0.825540

● ENGINE 4 WL155

COND. 1.00.137.002

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
1.8	-0.170190	0.834040
3.7	-0.169010	0.833540
5.5	-0.185630	0.840610
8.1	-0.132160	0.817850
13.3	0.029327	0.749220
23.1	0.236880	0.660020
33.1	0.444250	0.567340
43.0	0.322870	0.622200
52.2	0.073823	0.730260
57.5	-0.141700	0.821900
62.4	-0.241940	0.864650
66.6	-0.134540	0.818870
72.2	-0.066185	0.789820
81.5	0.033317	0.747530
89.0	0.056815	0.737520
96.8	0.179200	0.685030

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
96.8	0.185850	0.682160
89.0	0.118450	0.711180
81.5	0.130170	0.706140
72.2	0.073880	0.730230
66.6	0.003677	0.760140
62.4	-0.081009	0.796120
57.5	-0.084710	0.797680
52.2	-0.033810	0.776060
43.0	-0.055185	0.785150
33.1	-0.021356	0.770770
23.1	0.038635	0.745260
13.3	-0.119020	0.812260
8.1	-0.297560	0.888520
5.5	-0.260330	0.872530
3.7	-0.263010	0.873680
1.8	-0.243650	0.865380

125209-205B

Table B-6. Tabulated Data for Test 273-12, Condition 1.00.137.002 (Continued)

● ENGINE 4 060 deg INLET RADIAL

COND. 1.00.137.002

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
44.1	0.580570	0.502650	2.7	-1.079200	1.257400
32.2	****	****	6.1	-0.801180	1.115800
23.1	****	****	12.6	-0.550940	0.999630
16.6	0.211810	0.670930	17.0	-0.540720	0.995050
10.2	****	****	26.3	-0.300590	0.889830
4.9	0.308260	0.628680	32.7	-0.332460	0.903570
2.0	0.667590	0.458820	43.2	-0.263880	0.874050
0.0	0.744280	0.417880			

● ENGINE 4 180 deg INLET RADIAL

COND. 1.00.137.002

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
42.5	0.581730	0.502080	6.2	-0.005137	0.763890
31.7	0.369120	0.601540	9.5	-0.244440	0.865730
24.4	0.096527	0.720570	13.2	-0.309330	0.893590
17.8	0.011016	0.757020	17.8	-0.270080	0.876710
11.1	-0.201710	0.847470	27.2	-0.059648	0.787050
5.5	-0.094653	0.801920	34.5	-0.233820	0.861190
2.4	****	****	45.5	-0.186550	0.841010
0.0	****	****			

● ENGINE 4 300 deg INLET RADIAL

COND. 1.00.137.002

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
42.3	0.598310	0.493900	2.7	-1.151000	1.297000
32.2	0.440580	0.569040	5.8	-0.737900	1.085600
22.7	0.255320	0.651970	12.7	-0.726060	1.080000
16.4	0.163060	0.692010	17.1	-0.503600	0.978480
9.9	0.064575	0.734210	26.4	-0.489060	0.972030
4.7	0.240560	0.658430	33.0	-0.446060	0.953050
2.0	0.672000	0.456540	43.3	-0.362000	0.916350
0.0	0.709700	0.436660			

125209-206B

Table B-6. Tabulated Data for Test 273-12, Condition 1.00.137.002 (Concluded)

● WBL 445

COND 1.00.137.003

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.849040	1.210500
2.0	-1.069900	1.339800
3.0	-1.251300	1.460300
5.0	-1.373200	1.551800
7.5	-1.346600	1.531000
10.0	-1.263800	1.469300
15.0	-0.626520	1.093500
20.0	-0.483720	1.023100
22.5	-0.512520	1.037000
25.0	-0.536870	1.048900
30.0	-0.605280	1.082800
35.0	-0.674370	1.117800
40.0	-0.760550	1.162700
45.0	-0.624510	1.092400
50.0	-0.583580	1.072000
52.4	-0.546210	1.053500
55.0	-0.555110	1.057900
60.0	-0.466650	1.014900
65.0	-0.378120	0.972760
70.0	-0.298050	0.935360
75.0	-0.192320	0.386730
80.0	-0.086534	0.838660

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	-0.030000	0.813120
60.0	-0.026079	0.811350
55.0	-0.024065	0.810440
50.0	-0.025970	0.811300
45.0	-0.009061	0.803670
40.0	-0.010156	0.804170
35.0	-0.014578	0.806160
30.0	-0.068662	0.830580
25.0	-0.072272	0.832210
20.0	-0.120960	0.854260
15.0	-0.177800	0.880100
10.0	0.090419	0.758790
5.0	0.403660	0.614800
3.0	0.456170	0.589730
2.0	0.486840	0.574890
1.0	0.526050	0.555660

● WBL 470

COND. 1.00.137.003

UPPER SURFACE

X/C - %	CP	LOCAL MACH
11.0	-1.107900	1.363700
20.0	-0.559700	1.060100
30.0	-0.646700	1.103700
40.0	-0.750300	1.157300
50.0	-0.541330	1.051100
60.0	****	****

● WBL 510

COND. 1.00.137.003

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.436850	1.000600
2.0	-0.617920	1.089100
3.0	-0.769230	1.167300
5.0	-1.006700	1.301100
7.5	-1.038600	1.320400
10.0	-0.806280	1.187200
15.0	-0.589250	1.074800
20.0	-0.681780	1.121600
22.5	-0.699780	1.130900
25.0	-0.742630	1.153200
27.5	-0.713460	1.137900
30.0	-0.704970	1.133500
35.0	-0.708320	1.135300
40.0	-0.772640	1.169100
45.0	-0.569290	1.064900
47.5	-0.589010	1.074700
50.0	-0.627350	1.093900
52.4	-0.565150	1.062800
55.0	-0.568550	1.064500
60.0	-0.477590	1.020100
65.0	-0.394760	0.980610
70.0	-0.301710	0.937060

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	-0.052742	0.823380
60.0	-0.059048	0.826230
55.0	-0.063463	0.828230
50.0	-0.084113	0.837560
45.0	-0.025382	0.811040
40.0	0.059510	0.772740
35.0	0.025998	0.787860
30.0	0.035058	0.783770
25.0	0.076515	0.765070
20.0	0.090544	0.758740
15.0	0.175340	0.720340
10.0	0.182600	0.717050
5.0	0.187330	0.714900
3.0	0.195140	0.711340
2.0	0.163520	0.725700
1.0	0.175340	0.720340

125209-200B

Table B-7. Tabulated Data for Test 273-12, Condition 1.00.137.003

● ENGINE 3 WL 180

COND. 1.00.137.003

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
1.7	0.124600	0.743340
3.3	0.082530	0.762350
5.1	0.134670	0.738780
7.5	0.269930	0.677130
10.0	0.467540	0.584250
12.8	0.523680	0.556840
16.0	0.393550	0.619580
21.4	0.006051	0.796860
26.1	-0.136910	0.861490
29.6	-0.129380	0.858070
34.9	-0.075134	0.833510
47.6	-0.055798	0.824770
65.1	0.083107	0.762090
78.7	0.014426	0.793080

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
78.7	0.003068	0.798200
65.1	0.090995	0.758530
47.6	0.128700	0.741480
34.9	0.090222	0.758890
29.6	0.065516	0.770030
26.1	0.047092	0.778350
21.4	0.072882	0.766710
16.0	-0.101480	0.845430
12.8	-0.115040	0.851580
10.0	-0.093176	0.841670
7.5	-0.080614	0.835980
5.1	-0.073199	0.832630
3.3	0.014259	0.793150
1.7	-0.083002	0.837070

● ENGINE 3 WL 155

COND 1.00.137.003

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
7.5	-0.012683	0.805300
12.3	-0.003316	0.801080
21.5	0.172010	0.721850
30.4	0.309130	0.659040
39.3	0.229370	0.695730
48.5	0.095636	0.756440
53.8	-0.070196	0.831270
57.2	****	****
62.0	-0.178890	0.880600
67.2	-0.083105	0.837110
75.9	0.004751	0.797440
82.8	0.031861	0.785210
90.0	0.071330	0.767410

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
90.0	0.114880	0.747740
82.8	0.135310	0.738500
75.9	0.084860	0.761300
67.2	0.086480	0.760570
62.0	-0.010185	0.804160
57.2	-0.064403	0.828650
53.8	-0.041235	0.818190
48.5	-0.093959	0.842020
39.3	-0.051814	0.822960
30.4	-0.015608	0.806630
21.5	0.041797	0.780730
12.3	-0.158150	0.871150
7.5	-0.302880	0.937600
5.1	-0.295680	0.934260

● ENGINE 3 030 deg CORE COWL

COND. 1.00.137.003

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.272290	0.676040
24.0	0.008116	0.795920
29.2	-0.168420	0.875830
37.9	-0.317130	0.944220
44.7	0.044090	0.779700
49.9	-0.359500	0.964020
53.1	-0.218090	0.898520
57.0	-0.339840	0.954810
58.2	-0.417170	0.991220
62.7	-0.333640	0.951910
64.9	-0.538410	1.049700
68.1	-0.567280	1.063900
69.1	-0.245310	0.911010
70.2	-0.114090	0.851140
74.0	-0.083673	0.837370
77.4	-0.183980	0.882920
80.8	-0.302460	0.937400
83.8	-0.248430	0.912450
86.7	-0.244030	0.910420
90.1	-0.182620	0.882300
92.0	-0.101930	0.845630
95.4	0.079241	0.763840
99.4	-0.017616	0.807530

Table B-7. Tabulated Data for Test 273-12, Condition 1.00.137.003 (Continued)

125209-201C

• ENGINE 3 030 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.424110	0.605080
5.0	0.647130	0.494020
3.3	0.827350	0.392410
1.3	****	****
0.2	****	****
0.0	1.100900	0.171980

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.412250	0.988880
1.1	-0.985720	1.288600
2.7	-0.942880	1.263500
5.8	-0.933080	1.257800
8.8	-0.838950	1.204900
12.5	-1.149700	1.390800
16.7	-0.601270	1.080800
21.1	-0.447670	1.005700
26.1	-0.334430	0.952280
33.5	-0.364570	0.966380
45.6	-0.349290	0.959220
57.2	-0.140010	0.862900
64.5	-0.016258	0.806910
71.8	-0.018845	0.808080
82.4	0.114700	0.747810
99.4	0.039320	0.781840

• ENGINE 3 090 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.249070	0.686710
5.0	0.441390	0.596830
3.3	0.700640	0.465370
1.3	1.084200	0.191810
0.1	****	****
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.004661	0.801680
1.1	-0.346250	0.957800
2.8	-0.315880	0.943630
6.1	-0.517280	1.039300
9.0	-0.527050	1.044100
12.9	-0.582960	1.071600
17.4	-0.366180	0.967140
22.7	-0.231110	0.904480
27.7	-0.271850	0.923230
34.7	-0.266890	0.920940
46.2	-0.287370	0.930400
57.5	-0.243730	0.910280
64.7	-0.113750	0.850970
71.9	-0.071437	0.831830
82.4	0.041549	0.780840
99.6	0.045386	0.779110

• ENGINE 3 150 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
9.0	0.149400	0.732110
5.2	0.318770	0.654570
3.6	0.465100	0.585420
1.5	0.870770	0.365100
0.2	****	****
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	0.197600	0.710210
1.2	-0.027671	0.812060
2.9	-0.121370	0.854430
6.2	-0.291170	0.932160
9.4	-0.393130	0.982190
14.5	-0.439370	1.001800
18.2	-0.427900	0.996310
22.7	-0.294780	0.933840
27.7	-0.323610	0.947230
34.5	-0.245500	0.911090
45.7	-0.206170	0.893050
57.0	-0.151680	0.868200
63.9	-0.087153	0.838940
71.0	-0.066681	0.829680
81.3	0.043607	0.779910
99.4	0.046859	0.778440

125209-202C

Table B-7. Tabulated Data for Test 273-12, Condition 1.00.137.003 (Continued)

- ENGINE 3 210 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
8.2	0.243450	0.689280
5.2	0.479910	0.578250
3.6	0.689830	0.471240
1.5	1.096200	0.177790
0.3	****	****
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.5	0.314160	0.656710
1.2	-0.218380	0.898640
2.9	-0.240540	0.908810
6.2	-0.668670	1.114800
9.3	-0.552490	1.056600
14.4	-0.556870	1.058700
18.1	-0.441230	1.002700
22.4	-0.349020	0.959100
27.5	-0.342650	0.956110
34.2	-0.355770	0.962250
45.5	-0.260960	0.918210
56.9	-0.177350	0.879890
63.9	-0.147270	0.866200
70.8	-0.114440	0.851290
81.0	-0.000742	0.799910
99.0	0.046978	0.778390

- ENGINE 3 270 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
8.1	0.335380	0.646850
5.5	0.565210	0.536130
3.7	0.744130	0.441250
1.3	****	****
0.1	****	****
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.061003	0.827110
1.0	-0.809880	1.189100
2.7	-0.573430	1.066900
6.2	-0.873000	1.223800
9.0	-0.912180	1.245900
12.8	-0.891400	1.234100
17.2	-0.662910	1.111900
21.7	-0.308720	0.940310
26.6	-0.300700	0.936560
33.8	-0.258190	0.916930
45.2	-0.320050	0.945570
56.6	-0.342310	0.955960
63.9	-0.208580	0.894150
71.1	-0.164680	0.874120
81.5	-0.0244[illegible]7	0.810600
99.0	0.045281	0.779170

- ENGINE 3 330 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.5	0.500770	0.568090
4.8	0.695440	0.468200
3.2	0.889860	0.352590
1.2	****	****
0.2	****	****
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.299020	0.935800
1.1	-1.044100	1.323800
2.7	-0.964720	1.276200
5.8	-1.062300	1.335000
8.8	-1.162700	1.399400
12.6	-0.905430	1.242000
17.8	-0.793310	1.180200
21.4	-0.376310	0.971900
26.1	-0.309440	0.940640
33.7	-0.237280	0.907310
45.4	-0.266980	0.920990
57.0	-0.301740	0.937060
64.5	-0.193010	0.887040
71.8	-0.116690	0.852310
82.7	0.010743	0.794730
99.4	0.036190	0.783250

125209-203C

Table B-7. Tabulated Data for Test 273-12, Condition 1.00.137.003 (Continued)

● WBL 809

COND. 1.00.137.003
UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.761050	1.162900
2.0	-1.013200	1.305000
3.0	-1.179900	1.410900
5.0	-1.320100	1.510700
7.5	-1.463900	1.627400
10.0	-1.531300	1.688700
15.0	-0.955700	1.270900
20.0	-0.725950	1.144500
22.5	****	****
25.0	-0.491380	1.026800
30.0	-0.448400	1.006100
35.0	-0.504280	1.033000
40.0	-0.498220	1.030100
45.0	-0.529710	1.045400
50.0	-0.528380	1.044800
52.4	-0.496530	1.029300
55.0	-0.472680	1.017800
60.0	-0.425020	0.994950
65.0	-0.349760	0.959450
70.0	-0.328410	0.949480
75.0	-0.251630	0.913920
80.0	-0.192400	0.886760

● WBL 834

COND. 1.00.137.003
UPPER SURFACE

X/C - %	CP	LOCAL MACH
12.0	-1.142400	1.386000
24.0	-0.559330	1.060000
30.0	-0.592810	1.076500
40.0	-0.594610	1.077400
50.0	-0.516290	1.038900
60.0	-0.352790	0.960870

● WBL 870

COND. 1.00.137.003
UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.281890	0.927880
2.0	-0.497200	1.029600
3.0	-0.543640	1.052200
5.0	-0.710170	1.136200
7.5	-0.947110	1.265900
10.0	-1.039700	1.321100
15.0	-1.014500	1.305800
20.0	-0.609610	1.085000
22.5	-0.550360	1.055500
25.0	-0.604750	1.082500
30.0	-0.525410	1.043300
35.0	-0.543490	1.052200
40.0	-0.526600	1.043900
45.0	-0.534110	1.047600
47.5	-0.515710	1.038600
50.0	-0.525750	1.043500
52.4	-0.507190	1.034400
55.0	-0.473130	1.018000
60.0	-0.402060	0.984060
65.0	-0.337580	0.953750
70.0	-0.269850	0.922320

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	0.014378	0.793100
60.0	-0.011901	0.804950
55.0	0.003360	0.798070
50.0	0.011874	0.794230
45.0	-0.015576	0.806610
40.0	-0.018771	0.808050
35.0	-0.011831	0.804920
30.0	-0.006960	0.802730
25.0	0.000794	0.799230
20.0	0.005219	0.797230
15.0	0.042085	0.780600
10.0	0.094572	0.756910
7.5	0.101810	0.753640
5.0	0.088806	0.759530
3.0	0.100010	0.754460
2.0	0.104900	0.752250
1.0	0.024846	0.788380

125209-204C

Table B-7. Tabulated Data for Test 273-12, Condition 1.00.137.003 (Continued)

- ENGINE 4 WL 180

COND. 1.00.137.003

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
6.7	0.459000	0.588380
8.7	0.565600	0.535950
10.9	0.625070	0.505560
14.5	0.512860	0.562160
17.9	0.270200	0.677010
21.6	0.183340	0.716710
28.4	-0.081270	0.836280
33.7	-0.245290	0.911000
37.7	-0.242210	0.909580
44.2	-0.218850	0.898860
58.9	-0.000039	0.799610
81.5	0.134730	0.738760
96.4	0.174910	0.720540

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
96.4	0.137110	0.737680
81.5	0.119140	0.745820
58.9	0.024704	0.788450
44.2	0.010081	0.795040
37.7	0.016201	0.792290
33.7	0.050972	0.776600
28.4	0.082240	0.762490
21.6	0.141040	0.735900
17.9	0.057168	0.773800
14.5	-0.047702	0.821110
10.9	-0.153840	0.869190
8.7	-0.173990	0.878370
6.7	-0.139210	0.862540
4.7	-0.117500	0.852690

- ENGINE 4 WL 155

COND. 1.00.137.003

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
1.8	-0.178000	0.880200
3.7	-0.186760	0.884190
5.5	-0.217800	0.898380
8.1	-0.176860	0.879670
13.3	0.010871	0.794690
23.1	0.205530	0.706610
33.1	0.395630	0.618600
43.0	0.273410	0.675540
52.2	0.017291	0.791790
57.5	-0.220520	0.899640
62.4	-0.353850	0.961360
66.6	-0.191480	0.886340
72.2	-0.071015	0.831650
81.5	0.026364	0.787700
89.0	0.035678	0.783490
96.8	0.170880	0.722370

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
96.8	0.154720	0.729700
89.0	0.106030	0.751740
81.5	0.102950	0.753130
72.2	0.067811	0.768990
66.6	-0.039426	0.817370
62.4	-0.122990	0.855180
57.5	-0.111880	0.850140
52.2	-0.077676	0.834660
43.0	-0.050350	0.822300
33.1	-0.018831	0.808080
23.1	0.047740	0.778050
13.3	-0.109010	0.848850
8.1	-0.315410	0.943420
5.5	-0.275010	0.924710
3.7	-0.279510	0.926790
1.8	-0.224380	0.901400

125209-205C

Table B-7. Tabulated Data for Test 273-12, Condition 1.00.137.003 (Continued)

- ENGINE 4 060 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
44.1	0.638340	0.498640
32.2	0.246590	0.687840
23.1	0.629150	0.503430
16.6	0.300790	0.662890
10.2	****	****
4.9	0.335350	0.623450
2.0	0.710330	0.460070
0.0	0.744150	0.441240

OUTER SURFACE

X/C - %	CP	LOCAL MACH
2.7	-1.028200	1.314100
6.1	-0.954490	1.270200
12.6	-0.933000	1.257800
17.0	-0.515440	1.038400
26.3	-0.305330	0.938730
32.7	-0.346640	0.957980
43.2	-0.282570	0.928190

- ENGINE 4 180 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
42.5	0.643740	0.495810
31.7	0.448300	0.593510
24.4	0.204580	0.707030
17.8	0.141140	0.735850
11.1	-0.017293	0.807380
5.5	0.109630	0.750100
2.4	****	****
0.0	****	****

OUTER SURFACE

X/C - %	CP	LOCAL MACH
6.2	-0.121840	0.854650
9.5	-0.359390	0.963950
13.2	-0.487110	1.024700
17.8	-0.347630	0.958440
27.2	-0.098166	0.843930
34.5	-0.285190	0.929400
45.5	-0.218730	0.898800

- ENGINE 4 300 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
42.3	0.646290	0.494460
32.2	0.504680	0.566170
22.7	0.334860	0.647090
16.4	0.243780	0.689130
9.9	0.141790	0.735550
4.7	0.296810	0.664740
2.0	0.702300	0.464470
0.0	0.752100	0.436740

OUTER SURFACE

X/C - %	CP	LOCAL MACH
2.7	-1.034100	1.317600
5.8	-0.883350	1.229600
12.7	-0.822950	1.196200
17.1	-0.722250	1.142500
26.4	-0.438500	1.001400
33.0	-0.445010	1.004500
43.3	-0.367420	0.967720

125209-206C

Table B-7. Tabulated Data for Test 273-12, Condition 1.00.137.003 (Concluded)

● WBL 445

COND. 1.00.137.001

UPPER SURFACE X/C - %	CP	LOCAL MACH
1.0	-0.442900	1.080400
2.0	-0.664580	1.205500
3.0	-0.842480	1.316400
5.0	-0.921580	1.369900
7.5	-1.059100	1.470900
10.0	-0.961990	1.398400
15.0	-0.851310	1.322300
20.0	-0.559680	1.144800
22.5	-0.516980	1.120900
25.0	-0.522000	1.123700
30.0	-0.516230	1.120500
35.0	-0.529810	1.128000
40.0	-0.687330	1.219100
45.0	-0.671030	1.209300
50.0	-0.684620	1.217400
52.4	-0.626220	1.183000
55.0	-0.649310	1.196500
60.0	-0.641500	1.191900
65.0	-0.496540	1.109600
70.0	-0.320670	1.015700
75.0	-0.188270	0.948070
80.0	-0.094238	0.901140

LOWER SURFACE X/C - %	CP	LOCAL MACH
65.0	-0.051160	0.879870
60.0	-0.059281	0.883870
55.0	-0.052104	0.880330
50.0	-0.046627	0.877630
45.0	-0.023766	0.866400
40.0	-0.019801	0.864450
35.0	-0.034729	0.871780
30.0	-0.067217	0.887780
25.0	-0.108580	0.908250
20.0	-0.477850	1.099400
15.0	-0.424580	1.070500
10.0	-0.053618	0.881080
5.0	0.293550	0.711360
3.0	0.357780	0.679640
2.0	0.398760	0.659230
1.0	0.430870	0.643110

● WBL 470

COND. 1.00.137.001

UPPER SURFACE X/C - %	CP	LOCAL MACH
11.0	-0.871700	1.335800
20.0	-0.486980	1.104300
30.0	-0.572420	1.152000
40.0	-0.710650	1.233200
50.0	-0.712810	1.234500
60.0	****	****

● WBL 510

COND. 1.00.137.001

UPPER SURFACE X/C - %	CP	LOCAL MACH
1.0	-0.199390	0.953670
2.0	-0.364250	1.038500
3.0	-0.499800	1.111400
5.0	-0.699270	1.226300
7.5	-0.740390	1.251400
10.0	-0.722880	1.240600
15.0	-0.458690	1.088900
20.0	-0.490380	1.106200
22.5	-0.560410	1.145200
25.0	-0.617040	1.177600
27.5	-0.595960	1.165500
30.0	-0.596090	1.165500
35.0	-0.571950	1.151800
40.0	-0.682430	1.216100
45.0	-0.766120	1.267400
47.5	-0.733620	1.247200
50.0	-0.720360	1.239100
52.4	-0.712800	1.234500
55.0	-0.758020	1.262300
60.0	-0.769830	1.269700
65.0	-0.657760	1.201500
70.0	-0.271680	0.990420

LOWER SURFACE X/C - %	CP	LOCAL MACH
65.0	-0.085923	0.897020
60.0	-0.084784	0.896460
55.0	-0.079905	0.894050
50.0	-0.087225	0.897670
45.0	-0.059243	0.883850
40.0	0.054798	0.827940
35.0	0.008434	0.850610
30.0	0.013151	0.848290
25.0	0.064069	0.823410
20.0	0.067975	0.821510
15.0	0.095470	0.808110
10.0	0.062604	0.824130
5.0	0.097258	0.807240
3.0	0.101650	0.805100
2.0	-0.031261	0.870080
1.0	-0.025891	0.867440

125209-207A

Table B-8. Tabulated Data for Test 273-15, Condition 1.00.137.001

● ENGINE 3 WL 180

COND. 1.00.137.001

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
1.7	0.203900	0.755260
3.3	0.172230	0.770710
5.1	0.075329	0.817930
7.5	0.317120	0.699760
10.0	0.469140	0.623730
12.8	0.447430	0.634750
16.0	0.246810	0.734290
21.4	-0.166740	0.937260
26.1	-0.344490	1.028100
29.6	-0.484770	1.103100
34.9	-0.158290	0.933030
47.6	-0.057967	0.883220
65.1	0.047984	0.831270
78.7	-0.010743	0.860010

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
78.7	-0.030450	0.869680
65.1	0.047316	0.831600
47.6	0.089065	0.811230
34.9	0.022868	0.843550
29.6	-0.043726	0.876210
26.1	-0.075546	0.891900
21.4	-0.036545	0.872680
16.0	-0.125640	0.916730
12.8	-0.132490	0.920150
10.0	-0.090287	0.899190
7.5	-0.070899	0.889610
5.1	-0.038619	0.873700
3.3	0.094763	0.808450
1.7	-0.041496	0.875120

● ENGINE 3 WL 155

COND. 1.00.137.001

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
7.5	-0.108690	0.908310
12.3	-0.049811	0.879210
21.5	0.143770	0.784570
30.4	0.293550	0.711370
39.3	0.162050	0.775670
48.5	0.009969	0.849860
53.8	-0.183890	0.945870
57.2	****	****
62.0	-0.624040	1.181700
67.2	-0.138930	0.923350
75.9	0.005825	0.851890
82.8	0.029277	0.840410
90.0	0.058129	0.826320

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
90.0	0.091039	0.810270
82.8	0.116750	0.797740
75.9	0.049199	0.830670
67.2	0.046609	0.831940
62.0	-0.082038	0.895100
57.2	-0.170030	0.938910
53.8	-0.134740	0.921260
48.5	-0.156320	0.932050
39.3	-0.050708	0.879650
30.4	0.013031	0.848360
21.5	0.054700	0.827990
12.3	-0.158310	0.933030
7.5	-0.320600	1.015700
5.1	-0.288310	0.998970

● ENGINE 3 030 deg CORE COWL

COND. 1.00.137.001

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.361580	0.677760
24.0	-0.036133	0.872480
29.2	-0.132270	0.920040
37.9	-0.243740	0.976150
44.7	0.006523	0.851540
49.9	-0.213080	0.960590
53.1	-0.222320	0.965270
57.0	-0.371210	1.042100
58.2	-0.397000	1.055800
62.7	-0.479930	1.100500
64.9	-0.437270	1.077300
68.1	-0.450540	1.084500
69.1	-0.348150	1.030000
70.2	-0.350080	1.031000
74.0	-0.482990	1.102200
77.4	-0.389910	1.052000
80.8	-0.285850	0.997710
83.8	-0.266820	0.987940
86.7	-0.193360	0.950630
90.1	-0.085426	0.896790
92.0	0.036330	0.836960
95.4	0.062170	0.824340
99.4	0.045997	0.832240

125209-209A

Table B-8. Tabulated Data for Test 273-15, Condition 1.00.137.001 (Continued)

- ENGINE 3 330 deg CORE COWL

COND. 1.00.137.001
INBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.403210	0.657000
24.0	0.305550	0.705460
29.2	0.097848	0.806950
37.9	0.239730	0.737760
44.7	0.084170	0.813620
49.9	0.006356	0.851630
53.1	-0.020914	0.865000
57.0	-0.107900	0.907920
58.2	-0.027208	0.868090
62.7	-0.008336	0.858830
64.9	-0.233820	0.971110
68.1	-0.388790	1.051400
69.1	-0.269140	0.989130
70.2	-0.263540	0.986260
74.0	-0.372370	1.042800
77.4	-0.516970	1.120900
80.8	-0.493530	1.107900
83.8	-0.651320	1.197700
86.7	-0.646930	1.195100
90.1	-0.624700	1.182100
92.0	-0.457660	1.088400
95.4	-0.390280	1.052200
99.4	-0.309530	1.009900

- ENGINE 3 030 deg INLET RADIAL

COND. 1.00.137.001
INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.247010	0.734190
5.0	0.368590	0.674280
3.3	0.566850	0.573200
1.3	0.889820	0.385100
0.2	1.151600	0.143330
0.0	0.735770	0.480420

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.453900	1.086300
1.1	-0.800230	1.289000
2.7	-0.671320	1.209500
5.8	-0.635880	1.188600
8.8	-0.692320	1.222100
12.5	-0.958950	1.396200
16.7	-0.969140	1.403600
21.1	-1.052800	1.466000
26.1	-0.698520	1.225800
33.5	-0.304310	1.007200
45.6	-0.388160	1.051100
57.2	-0.180350	0.944080
64.5	-0.123310	0.915570
71.8	-0.043248	0.875970
82.4	0.084051	0.813670
99.4	0.258370	0.728620

- ENGINE 3 090 deg INLET RADIAL

COND. 1.00.137.001
INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.168530	0.772500
5.0	0.262420	0.726650
3.3	0.449730	0.633580
1.3	0.796400	0.444550
0.1	****	****
0.0	0.852620	0.409500

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.259950	0.994420
1.1	-0.444790	1.081400
2.8	-0.352850	1.032500
6.1	-0.533810	1.130300
9.0	-0.639620	1.190800
12.9	-0.715700	1.236200
17.4	-0.647410	1.195400
22.7	-0.498050	1.110400
27.7	-0.273090	0.991150
34.7	-0.316930	1.013800
46.2	-0.352050	1.032100
57.5	-0.309610	1.010000
64.7	-0.151300	0.929520
71.9	-0.105420	0.906680
82.4	0.020747	0.844580
99.6	0.225340	0.744790

125209-210A

Table B-8. Tabulated Data for Test 273-15, Condition 1.00.137.001 (Continued)

● ENGINE 3 150 deg INLET RADIAL

COND. 1.00.137.001

INNER SURFACE X/C - %	CP	LOCAL MACH
9.0	0.102220	0.804810
5.2	0.288970	0.713610
3.6	0.469420	0.623590
1.5	0.811420	0.435380
0.2	1.156200	0.135700
0.0	0.883450	0.389370

OUTER SURFACE X/C - %	CP	LOCAL MACH
0.4	-0.013569	0.861390
1.2	-0.314530	1.012500
2.9	-0.326690	1.018800
6.2	-0.479940	1.100500
9.4	-0.582440	1.157700
14.5	-0.833450	1.310500
18.2	-0.756140	1.261200
22.7	-0.669030	1.208100
27.7	-0.435220	1.076200
34.5	-0.297720	1.003800
45.7	-0.265040	0.987030
57.0	-0.171160	0.939470
63.9	-0.135560	0.921670
71.0	-0.105580	0.906760
81.3	0.001888	0.853810
99.4	0.210290	0.752140

● ENGINE 3 210 deg INLET RADIAL

COND. 1.00.137.001

INNER SURFACE X/C - %	CP	LOCAL MACH
8.2	0.131720	0.790440
5.2	0.318460	0.699100
3.6	0.508540	0.603560
1.5	0.823880	0.427670
0.3	1.151100	0.144110
0.0	0.880460	0.391360

OUTER SURFACE X/C - %	CP	LOCAL MACH
0.5	-0.136060	0.921930
1.2	-0.438310	1.105100
2.9	-0.348000	1.030000
6.2	-0.591940	1.163200
9.3	-0.754350	1.260000
14.4	-0.762750	1.265300
18.1	-0.699020	1.226100
22.4	-0.761350	1.264400
27.5	-0.671610	1.209700
34.2	-0.341200	1.026400
45.5	-0.288050	0.998840
56.9	-0.204910	0.956460
63.9	-0.166660	0.937220
70.8	-0.124290	0.916070
81.0	0.019575	0.845150
99.0	0.194700	0.759750

125209-211A

Table B-8. Tabulated Data for Test 273-15, Condition 1.00.137.001 (Continued)

• ENGINE 3 270 deg INLET RADIAL

COND. 1.00.137.001

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
8.1	0.201200	0.756580	0.4	-0.063406	0.885900
5.5	0.330120	0.693340	1.0	-0.812930	1.297200
3.7	0.505480	0.605130	2.7	-0.583560	1.158400
1.3	0.828290	0.424910	6.2	-0.674590	1.211500
0.1	1.190800	0.051072	9.0	-0.783140	1.278100
0.0	0.775540	0.457100	12.8	-0.883930	1.344100
			17.2	-0.695580	1.224000
			21.7	-0.561970	1.146100
			26.6	-0.591210	1.162700
			33.8	-0.570340	1.150800
			45.2	-0.244530	0.976550
			56.6	-0.336630	1.024000
			63.9	-0.191650	0.949770
			71.1	-0.144680	0.926220
			81.5	-0.002934	0.856170
			99.0	0.182880	0.765510

• ENGINE 3 330 deg INLET RADIAL

COND. 1.00.137.001

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
7.5	0.282110	0.716990	0.4	-0.343100	1.027400
4.8	0.399280	0.658970	1.1	-0.912430	1.363600
3.2	0.566620	0.573320	2.7	-0.739490	1.250800
1.2	0.905470	0.374500	5.8	-0.838920	1.314100
0.2	1.103600	0.207090	8.8	-0.880270	1.341600
0.0	0.765780	0.462890	12.6	-0.686150	1.218400
			17.8	-0.797700	1.287400
			21.4	-0.810250	1.295500
			26.1	-0.806790	1.293200
			33.7	-0.315100	1.012800
			45.4	-0.223050	0.965630
			57.0	-0.320050	1.015400
			64.5	-0.187430	0.947640
			71.8	-0.123620	0.915720
			82.7	0.017948	0.845950
			99.4	0.159230	0.777040

125209-212A

Table B-8. Tabulated Data for Test 273-15, Condition 1.00.137.001 (Continued)

● WBL 809

COND. 1.00.137.001

UPPER SURFACE

X/C - %	CP	LOCAL MACH
2.0	-0.231930	0.970140
3.0	-0.350860	1.031400
5.0	-0.673270	1.210700
7.5	-0.827210	1.306400
10.0	-0.977690	1.409700
15.0	-1.066300	1.476500
20.0	-1.204600	1.592700
22.5	****	****
25.0	-0.949010	1.389200
30.0	-0.865950	1.332000
35.0	-0.832550	1.309900
40.0	-0.675010	1.211700
45.0	-0.515480	1.120100
50.0	-0.280100	0.994740
52.4	-0.248690	0.978670
55.0	-0.366010	1.039400
60.0	-0.433420	1.075200
65.0	-0.438390	1.077900
70.0	-0.409080	1.062200
75.0	-0.338820	1.025100
80.0	-0.331490	1.021300

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	-0.009763	0.859520
60.0	-0.058396	0.883430
55.0	-0.086712	0.897410
50.0	-0.158660	0.933210
45.0	0.194770	0.759720
40.0	-0.004437	0.856910
35.0	0.381460	0.667860
30.0	0.140630	0.786100
25.0	-0.228610	0.968450
20.0	-0.485930	1.103800
15.0	-0.410650	1.063100
10.0	-0.249090	0.978880
5.0	0.414780	0.651200
3.0	0.430090	0.643490
1.0	0.137300	0.787720

● WBL 834

COND. 1.00.137.001

UPPER SURFACE

X/C - %	CP	LOCAL MACH
12.0	-0.907510	1.360200
24.0	-0.961410	1.398000
30.0	-0.318790	1.014700
40.0	-0.465440	1.092600
50.0	-0.478340	1.099600
60.0	-0.390700	1.052400

● WBL 870

COND. 1.00.137.001

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.041313	0.875020
2.0	-0.273360	0.991290
3.0	-0.330950	1.021000
5.0	-0.940810	1.383400
7.5	-0.825300	1.305200
10.0	-0.835960	1.312100
15.0	-0.879280	1.340900
20.0	-0.944760	1.386200
22.5	-0.889940	1.348100
25.0	-0.894230	1.351100
30.0	-0.441130	1.079400
35.0	-0.349860	1.030900
40.0	-0.420670	1.068400
45.0	-0.488910	1.105400
47.5	-0.566270	1.148500
50.0	-0.559050	1.144400
52.4	-0.557160	1.143400
55.0	-0.554580	1.141900
60.0	-0.498200	1.110500
65.0	-0.366360	1.039600
70.0	-0.291750	1.000700

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	0.050401	0.830080
60.0	0.019940	0.844970
55.0	0.011039	0.849330
50.0	0.023702	0.843130
45.0	-0.004537	0.856960
40.0	-0.010012	0.859640
35.0	-0.018058	0.863590
30.0	-0.009155	0.859220
25.0	-0.025246	0.867120
20.0	-0.018570	0.863840
15.0	-0.006589	0.857960
10.0	0.034826	0.837690
7.5	0.017370	0.846230
5.0	-0.002822	0.856120
3.0	-0.045611	0.877130
2.0	-0.118170	0.913010
1.0	-0.181490	0.944660

125209-212A

Table B-8: Tabulated Data for Test 273-15, Condition 1.00.137.001 (Continued)

• ENGINE 4 WL 180

COND. 1.00.137.001

INBOARD SURFACE X/C - %	CP	LOCAL MACH	OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
6.7	0.381670	0.667770	96.4	0.125260	0.793590
8.7	0.464310	0.626200	81.5	0.104420	0.803750
10.9	0.468070	0.624280	58.9	0.020328	0.844790
14.5	0.354120	0.681460	44.2	-0.078560	0.893390
17.9	0.123410	0.794490	37.7	-0.090739	0.899420
21.6	0.020535	0.844690	33.7	-0.067079	0.887720
28.4	-0.236000	0.972220	28.4	0.010112	0.849780
33.7	-0.461260	1.090300	21.6	0.047242	0.831630
37.7	-0.615560	1.176800	17.9	0.039912	0.835220
44.2	-0.298940	1.004500	14.5	-0.043911	0.876300
58.9	-0.031437	0.870160	10.9	-0.134240	0.921020
81.5	0.100040	0.805880	8.7	-0.142580	0.925180
96.4	0.137110	0.787820	6.7	-0.090546	0.899310
			4.7	-0.056993	0.882740

• ENGINE 4 WL 155

COND. 1.00.137.001

INBOARD SURFACE X/C - %	CP	LOCAL MACH	OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
1.8	-0.135620	0.921700	96.8	0.159590	0.776870
3.7	-0.195040	0.951480	89.0	0.082182	0.814590
5.5	-0.240840	0.974680	81.5	0.086290	0.812580
8.1	-0.227180	0.967740	72.2	0.003316	0.853110
13.3	-0.043397	0.876050	66.6	-0.103180	0.905570
23.1	0.147580	0.782720	62.4	-0.234930	0.971670
33.1	0.305840	0.705330	57.5	-0.197820	0.952880
43.0	0.168480	0.772530	52.2	-0.145430	0.926600
52.2	-0.127350	0.917600	43.0	-0.058380	0.883430
57.5	-0.306600	1.008400	33.1	0.012837	0.848450
62.4	-0.629580	1.184900	23.1	0.064501	0.823210
66.6	-0.603820	1.170000	13.3	-0.115970	0.911920
72.2	-0.086450	0.897290	8.1	-0.309790	1.010100
81.5	0.039861	0.835240	5.5	-0.251900	0.980310
89.0	0.017154	0.846340	3.7	-0.229370	0.968850
96.8	0.169170	0.772190	1.8	-0.150120	0.928940

125209-213A

Table B-8. Tabulated Data for Test 273-15, Condition 1.00.137.001 (Continued)

• ENGINE 4 030 deg CORE COWL

COND. 1.00.137.001
OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.316250	0.700190
15.5	0.175240	0.769240
24.0	-0.119240	0.913550
29.2	-0.220330	0.964260
37.9	-0.069063	0.888700
44.7	-0.307890	1.009100
49.9	-0.315950	1.013300
53.1	-0.473410	1.096900
57.0	-0.374540	1.043900
58.2	-0.385570	1.049700
62.7	-0.350620	1.031300
64.9	-0.433160	1.075100
68.1	-0.280430	0.994920
69.1	-0.190940	0.949420
70.2	-0.304370	1.007300
74.0	-0.288850	0.999250
77.4	-0.472800	1.096600
80.8	-0.401230	1.058000
83.8	-0.433840	1.075500
86.7	-0.357930	1.035200
90.1	-0.120770	0.914310
92.0	-0.041595	0.875160
95.4	0.054657	0.828020
99.4	0.047608	0.831460

• ENGINE 4 330 deg CORE COWL

COND. 1.00.137.001
INBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.408290	0.654460
15.5	-0.054067	0.881300
24.0	0.116510	0.797860
29.2	0.030661	0.839740
37.9	0.103890	0.804010
44.7	-0.076999	0.892620
49.9	-0.012547	0.860890
53.1	-0.188810	0.948350
57.0	-0.209240	0.958650
58.2	-0.113230	0.910560
62.7	-0.378000	1.045700
64.9	-0.575810	1.154000
68.1	-0.452500	1.085600
69.1	-0.415680	1.065800
70.2	-0.394660	1.054600
74.0	-0.560190	1.145100
77.4	-0.641110	1.191700
80.8	-0.771550	1.270800
83.8	-0.761260	1.264400
86.7	-0.590870	1.162600
90.1	-0.388810	1.051400
92.0	-0.330790	1.021000
95.4	-0.200240	0.954110
99.4	-0.080350	0.894270

125209-214A

Table B-8. Tabulated Data for Test 273-15, Condition 1.00.137.001 (Continued)

• ENGINE 4 060 deg INLET RADIAL

COND. 1.00.137.001

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
44.1	0.690110	0.506390	2.7	-0.857580	1.326400
32.2	0.275350	0.720300	6.1	-0.828480	1.307300
23.1	0.676500	0.513990	12.6	-0.924510	1.371900
16.6	0.323070	0.696820	17.0	-0.838210	1.313600
10.2	****	****	26.3	-0.698210	1.225600
4.9	0.391710	0.662750	32.7	-0.242060	0.975290
2.0	0.705240	0.497870	43.2	-0.267750	0.988410
0.0	0.756720	0.468230			

• ENGINE 4 180 deg INLET RADIAL

COND. 1.00.137.001

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
42.5	0.667410	0.519020	6.2	-0.589600	1.161800
31.7	0.486860	0.614680	9.5	-0.577370	1.154800
24.4	0.273310	0.721300	13.2	-0.606970	1.171800
17.8	0.237980	0.738610	17.8	-0.627350	1.183600
11.1	0.087216	0.812130	27.2	-0.270410	0.989770
5.5	0.284500	0.715810	34.5	-0.243340	0.975940
2.4	0.626670	0.541300	45.5	-0.230710	0.969520
0.0	****	****			

• ENGINE 4 300 deg INLET RADIAL

COND. 1.00.137.001

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
42.3	0.668370	0.518500	2.7	-0.790730	1.283000
32.2	0.517050	0.599170	5.8	-0.650290	1.197000
22.7	0.360430	0.678320	12.7	-0.683050	1.216500
16.4	0.273140	0.721390	17.1	-0.734480	1.247700
9.9	0.151900	0.780610	26.4	-0.741470	1.252100
4.7	0.283020	0.716530	33.0	-0.759130	1.263000
2.0	0.689870	0.506530	43.3	-0.243980	0.976270
0.0	0.849610	0.411440			

Table B-8. Tabulated Data for Test 273-15, Condition 1.00.137.001 (Concluded)

126209-215A

● WBL 445

COND. 1.00.137.002

UPPER SURFACE X/C - %	CP	LOCAL MACH	LOWER SURFACE X/C - %	CP	LOCAL MACH
1.0	-0.941840	1.213900	65.0	-0.016946	0.783250
2.0	-1.275300	1.409000	60.0	-0.012981	0.781530
3.0	-1.299600	1.424600	55.0	-0.014565	0.782220
5.0	-1.469900	1.544700	50.0	-0.017476	0.783480
7.5	-1.430900	1.515700	45.0	0.000782	0.775540
10.0	-0.926130	1.205600	40.0	-0.009008	0.779800
15.0	-0.504130	0.998910	35.0	-0.016153	0.782910
20.0	-0.663030	1.073400	30.0	-0.047127	0.796370
22.5	-0.646380	1.065400	25.0	-0.070413	0.806500
25.0	-0.648760	1.066600	20.0	-0.089741	0.814900
30.0	-0.627340	1.056400	15.0	-0.125210	0.830340
35.0	-0.634960	1.060000	10.0	0.141340	0.714240
40.0	-0.638290	1.061600	5.0	0.430660	0.584210
45.0	-0.546470	1.018500	3.0	0.485460	0.558440
50.0	-0.553610	1.021800	2.0	0.514840	0.544390
52.4	-0.549800	1.020000	1.0	0.546080	0.529250
55.0	-0.515070	1.003900			
60.0	-0.454640	0.976300			
65.0	-0.369480	0.937920			
70.0	-0.299070	0.906590			
75.0	-0.186320	0.857010			
80.0	-0.104960	0.821520			

● WBL 470

COND. 1.00.137.002

UPPER SURFACE X/C - %	CP	LOCAL MACH
11.0	-0.575690	1.032100
20.0	-0.669750	1.076600
30.0	-0.664620	1.074200
40.0	-0.624930	1.055300
50.0	-0.559360	1.024400
60.0	****	****

● WBL 510

COND. 1.00.137.002

UPPER SURFACE X/C - %	CP	LOCAL MACH	LOWER SURFACE X/C - %	CP	LOCAL MACH
1.0	-0.535330	1.013300	65.0	-0.030071	0.788950
2.0	-0.686810	1.084800	60.0	-0.010004	0.780230
3.0	-0.860030	1.171100	55.0	-0.019809	0.784490
5.0	-1.022300	1.257700	50.0	-0.049902	0.797570
7.5	-0.736810	1.109200	45.0	0.006184	0.773200
10.0	-0.703900	1.093100	40.0	0.091904	0.735860
15.0	-0.697400	1.090000	35.0	0.059989	0.749780
20.0	-0.705580	1.093900	30.0	0.070248	0.745310
22.5	-0.700740	1.091600	25.0	0.100570	0.732080
25.0	-0.718400	1.100200	20.0	0.099889	0.732380
27.5	-0.633090	1.059100	15.0	0.184920	0.695090
30.0	-0.642570	1.063600	10.0	0.155060	0.708220
35.0	-0.608000	1.047200	5.0	0.228240	0.675940
40.0	-0.622120	1.053900	3.0	0.266770	0.658800
45.0	-0.582530	1.035300	2.0	0.226410	0.676750
47.5	-0.546480	1.018500	1.0	0.239410	0.670990
50.0	-0.559670	1.024600			
52.4	-0.550190	1.020200			
55.0	-0.536440	1.013800			
60.0	-0.491640	0.993190			
65.0	-0.401870	0.952440			
70.0	-0.315250	0.913760			

125209-207B

Table B-9. Tabulated Data for Test 273-15, Condition 1.00.137.002

- ENGINE 3 WL 180

COND. 1.00.137.002

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
1.7	0.121740	0.722830
3.3	0.068604	0.746030
5.1	0.158070	0.706900
7.5	0.282940	0.651590
10.0	0.509240	0.547090
12.8	0.588540	0.508310
16.0	0.446980	0.576600
21.4	0.027065	0.764120
26.1	-0.131890	0.833260
29.6	-0.128650	0.831850
34.9	-0.069323	0.806030
47.6	-0.063380	0.803440
65.1	0.075094	0.743210
78.7	0.019050	0.767600

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
78.7	0.027948	0.763740
65.1	0.106950	0.729300
47.6	0.139840	0.714900
34.9	0.124390	0.721670
29.6	0.092559	0.736580
26.1	0.088964	0.737160
21.4	0.098319	0.733070
16.0	-0.066645	0.804860
12.8	-0.080680	0.810970
10.0	-0.064652	0.804000
7.5	-0.062258	0.802960
5.1	-0.055186	0.799880
3.3	0.014241	0.769700
1.7	-0.081876	0.811480

- ENGINE 3 WL 155

COND. 1.00.137.002

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
7.5	-0.078041	0.809820
12.3	-0.021810	0.785370
21.5	0.183300	0.695810
30.4	0.348710	0.621910
39.3	0.255830	0.663690
48.5	0.106650	0.729430
53.8	-0.045414	0.795640
57.2	****	****
62.0	-0.146240	0.839520
67.2	-0.078387	0.809970
75.9	0.007055	0.772820
82.8	0.027112	0.764100
90.0	0.080434	0.740870

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
90.0	0.125360	0.721250
82.8	0.139810	0.714920
75.9	0.070050	0.745400
67.2	0.093988	0.734960
62.0	-0.001458	0.776530
57.2	-0.055871	0.800180
53.8	-0.020207	0.784670
48.5	-0.080508	0.810890
39.3	-0.028199	0.788150
30.4	0.001830	0.775090
21.5	0.051780	0.753360
12.3	-0.144620	0.838810
7.5	-0.275750	0.896290
5.1	-0.274590	0.895780

- ENGINE 3 030 deg CORE COWL

COND. 1.00.137.002

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.240820	0.670370
24.0	-0.014702	0.782290
29.2	-0.208930	0.866920
37.9	-0.251140	0.885450
44.7	0.013146	0.770180
49.9	-0.278370	0.897460
53.1	-0.041989	0.794150
57.0	-0.431480	0.965810
58.2	-0.356670	0.932200
62.7	-0.361030	0.934150
64.9	-0.539550	1.015300
68.1	-0.356820	0.932270
69.1	-0.021897	0.785420
70.2	-0.041484	0.793930
74.0	-0.112050	0.824620
77.4	-0.264060	0.891150
80.8	-0.273810	0.895440
83.8	-0.290080	0.902620
86.7	-0.185290	0.856570
90.1	-0.120400	0.828260
92.0	-0.011766	0.781010
95.4	0.123860	0.721910
99.4	0.059362	0.750060

125209-209B

Table B-9. Tabulated Data for Test 273-15, Condition 1.00.137.002 (Continued)

- ENGINE 3 330 deg CORE COWL

COND. 1.00.137.002
INBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.425640	0.586560
24.0	0.277070	0.654210
29.2	0.229040	0.675600
37.9	0.270640	0.657090
44.7	0.117100	0.724870
49.9	-0.002805	0.777110
53.1	0.046592	0.755630
57.0	0.057375	0.750930
58.2	-0.026904	0.787590
62.7	-0.019667	0.784450
64.9	-0.047448	0.796520
68.1	-0.319050	0.915460
69.1	-0.419680	0.960480
70.2	-0.287460	0.901470
74.0	-0.305320	0.909370
77.4	-0.280380	0.898340
80.8	-0.233460	0.877680
83.8	-0.164880	0.847650
86.7	-0.117150	0.826840
90.1	-0.243650	0.882170
92.0	-0.194100	0.860430
95.4	-0.066358	0.804740
99.4	-0.032136	0.789860

- ENGINE 3 030 deg INLET RADIAL

COND. 1.00.137.002
INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.207530	0.685110
5.0	0.359020	0.617210
3.3	0.563730	0.520600
1.3	0.900990	0.331470
0.2	1.106600	0.147540
0.0	0.582640	0.511240

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.818180	1.149700
1.1	-1.174600	1.345800
2.7	-0.997780	1.244200
5.8	-0.852550	1.167200
8.8	-0.874480	1.178500
12.5	-0.737580	1.109600
16.7	-0.631430	1.058300
21.1	-0.477080	0.986520
26.1	-0.352640	0.930390
33.5	-0.364620	0.935740
45.6	-0.344550	0.926790
57.2	-0.136340	0.835190
64.5	-0.071103	0.800790
71.8	0.001905	0.775060
82.4	0.119010	0.724020
99.4	0.274540	0.655330

- ENGINE 3 090 deg INLET RADIAL

COND. 1.00.137.002
INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.025944	0.764600
5.0	0.128890	0.719700
3.3	0.263970	0.660060
1.3	0.684960	0.458770
0.1	****	****
0.0	0.861870	0.356990

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.195870	0.861190
1.1	-0.410430	0.956300
2.8	-0.343330	0.926250
6.1	-0.477770	0.986840
9.0	-0.453800	0.975920
12.9	-0.499580	0.996820
17.4	-0.336290	0.923110
22.7	-0.220190	0.871840
27.7	-0.267910	0.892630
34.7	-0.278130	0.897330
46.2	-0.291300	0.903160
57.5	-0.223570	0.873330
64.7	-0.099612	0.819200
71.9	-0.060674	0.802260
82.4	0.044056	0.756720
99.6	0.229330	0.675460

125209-210B

Table B-9. Tabulated Data for Test 273-15, Condition 1.00.137.002 (Continued)

● ENGINE 3 150 deg INLET RADIAL

COND. 1.00.137.002

INNER SURFACE

X/C - %	CP	LOCAL MACH
9.0	-0.090248	0.815120
5.2	0.033839	0.761160
3.6	0.232470	0.674060
1.5	0.612870	0.496080
0.2	1.094900	0.163080
0.0	0.990240	0.266040

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	0.223420	0.678080
1.2	-0.078664	0.810080
2.9	-0.113730	0.825330
6.2	-0.264540	0.891340
9.4	-0.338150	0.923940
14.5	-0.394180	0.948990
18.2	-0.389020	0.946670
22.7	-0.269410	0.893490
27.7	-0.295090	0.904830
34.5	-0.226740	0.874720
45.7	-0.187500	0.857520
57.0	-0.088900	0.814530
63.9	-0.079977	0.810650
71.0	-0.058366	0.801260
81.3	0.029986	0.762840
99.4	0.210710	0.683700

● ENGINE 3 210 deg INLET RADIAL

COND. 1.00.137.002

INNER SURFACE

X/C - %	CP	LOCAL MACH
8.2	-0.124430	0.830030
5.2	0.100660	0.732050
3.6	0.294020	0.646610
1.5	0.644370	0.480000
0.3	1.098200	0.158930
0.0	0.966090	0.285010

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.5	0.034656	0.760820
1.2	-0.270210	0.893850
2.9	-0.252300	0.885960
6.2	-0.456280	0.977060
9.3	-0.497130	0.995710
14.4	-0.454620	0.976310
18.1	-0.370820	0.938520
22.4	-0.319930	0.915850
27.5	-0.310300	0.911580
34.2	-0.334920	0.922510
45.5	-0.256280	0.887710
56.9	-0.163340	0.846980
63.9	-0.140520	0.837020
70.8	-0.105650	0.821830
81.0	0.023765	0.765560
99.0	0.166850	0.703050

Table B-9. Tabulated Data for Test 273-15, Condition 1.00.137.002 (Continued)

125209-211B

● ENGINE 3 270 deg INLET RADIAL

COND. 1.00.137.002

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
8.1	0.089090	0.737090	0.4	-0.058283	0.801220
5.5	0.234570	0.673140	1.0	-0.872530	1.177500
3.7	0.434830	0.582270	2.7	-0.606580	1.046600
1.3	0.758490	0.418600	6.2	-1.018000	1.255300
0.1	****	****	9.0	-0.745990	1.113700
0.0	0.740960	0.428410	12.8	-0.868860	1.175600
			17.2	-0.382200	0.943610
			21.7	-0.311320	0.912020
			26.6	-0.301130	0.907500
			33.8	-0.255060	0.887160
			45.2	-0.307790	0.910450
			56.6	-0.329080	0.919900
			63.9	-0.209090	0.866980
			71.1	-0.159600	0.845340
			81.5	-0.026869	0.787560
			99.0	0.125680	0.721100

● ENGINE 3 330 deg INLET RADIAL

COND. 1.00.137.002

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
7.5	0.266780	0.658800	0.4	-0.740290	1.110900
4.8	0.388130	0.603900	1.1	-1.294100	1.421000
3.2	0.575330	0.514870	2.7	-1.099500	1.301400
1.2	0.890630	0.338380	5.8	-1.174300	1.345600
0.2	1.061100	0.201620	8.8	-1.176200	1.346700
0.0	0.590910	0.507120	12.6	-0.900660	1.192200
			17.8	-0.390630	0.947390
			21.4	-0.338810	0.924230
			26.1	-0.382600	0.943790
			33.7	-0.267680	0.892730
			45.4	-0.259490	0.889120
			57.0	-0.289640	0.902420
			64.5	-0.171940	0.850720
			71.8	-0.110540	0.823950
			82.7	0.023679	0.765590
			99.4	0.131740	0.718450

125209-212B

Table B-9. Tabulated Data for Test 273-15, Condition 1.00.137.002 (Continued)

● WBL 809

COND. 1.00.137.002

UPPER SURFACE

X/C - %	CP	LOCAL MACH
2.0	-0.861170	1.171700
3.0	-0.954070	1.220500
5.0	-1.124900	1.316200
7.5	-1.356800	1.463100
10.0	-1.498600	1.566800
15.0	-1.429000	1.514300
20.0	-1.068600	1.283600
25.0	-0.820980	1.151200
30.0	-0.660740	1.072300
35.0	-0.530260	1.011000
40.0	-0.480840	0.988240
45.0	-0.516690	1.004700
50.0	-0.490760	0.992780
55.0	-0.525560	1.008800
60.0	-0.505550	0.999530
65.0	-0.462230	0.979750
70.0	-0.412650	0.957300
75.0	-0.338180	0.923950
80.0	-0.321480	0.916530

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	0.001493	0.775240
60.0	-0.058251	0.801220
55.0	-0.077404	0.809530
50.0	-0.141340	0.837380
45.0	0.318690	0.635510
40.0	0.125670	0.721110
35.0	0.509370	0.547020
30.0	0.212720	0.682820
25.0	-0.163750	0.847150
20.0	-0.174490	0.851840
15.0	-0.183600	0.855820
10.0	-0.081594	0.811360
5.0	0.578470	0.513320
3.0	0.623060	0.490920
1.0	0.212500	0.682920

● WBL 834

COND. 1.00.137.002

UPPER SURFACE

X/C - %	CP	LOCAL MACH
12.0	-0.762120	1.121700
24.0	-0.670740	1.077100
30.0	-0.561800	1.025600
40.0	-0.586810	1.037300
50.0	-0.493460	0.994020
60.0	-0.362720	0.934900

● WBL 870

COND. 1.00.137.002

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.349380	0.928940
2.0	-0.570510	1.029700
3.0	-0.596520	1.041800
5.0	-1.288800	1.417500
7.5	-1.095200	1.298900
10.0	-1.108400	1.306500
15.0	-0.778880	1.130000
20.0	-0.725160	1.103500
22.5	-0.665660	1.074700
25.0	-0.621340	1.053500
30.0	-0.539720	1.014900
35.0	-0.565930	1.027500
40.0	-0.562320	1.025800
45.0	-0.562800	1.026100
47.5	-0.550040	1.020100
50.0	-0.559670	1.024600
52.4	-0.533420	1.012400
55.0	-0.508840	1.001100
60.0	-0.443800	0.971380
65.0	-0.377080	0.941320
70.0	-0.314690	0.913510

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	0.063450	0.748280
60.0	0.045460	0.756110
55.0	0.041861	0.757680
50.0	0.046418	0.755700
45.0	0.029149	0.763210
40.0	0.027231	0.764040
35.0	0.030590	0.762590
30.0	0.038503	0.759140
25.0	0.035866	0.760290
20.0	0.048335	0.754860
15.0	0.087431	0.737820
10.0	0.144760	0.712750
7.5	0.162740	0.704850
5.0	0.157230	0.707280
3.0	0.155310	0.708120
2.0	0.143790	0.713170
1.0	0.134920	0.717060

125209-212B

Table B-9. Tabulated Data for Test 273-15, Condition 1.00.137.002 (Continued)

• ENGINE 4 WL 180

COND. 1.00.137.002

INBOARD SURFACE X/C - %	CP	LOCAL MACH	OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
6.7	0.440160	0.579790	96.4	0.131520	0.718550
8.7	0.540710	0.531880	81.5	0.116060	0.725320
10.9	0.620430	0.492260	58.9	0.039968	0.758510
14.5	0.500020	0.551500	44.2	-0.004573	0.777880
17.9	0.270170	0.657290	37.7	0.023761	0.765560
21.6	0.168440	0.702350	33.7	0.061506	0.749130
28.4	-0.090525	0.815250	28.4	0.120850	0.723220
33.7	-0.229910	0.876120	21.6	0.165020	0.703850
37.7	-0.242100	0.881470	17.9	0.074869	0.743310
44.2	-0.235960	0.878780	14.5	-0.020950	0.785000
58.9	-0.037937	0.792380	10.9	-0.147200	0.839930
81.5	0.098302	0.733080	8.7	-0.166190	0.848220
96.4	0.143070	0.713490	6.7	-0.117240	0.826870
			4.7	-0.105570	0.821790

• ENGINE 4 WL 155

COND. 1.00.137.002

INBOARD SURFACE X/C - %	CP	LOCAL MACH	OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
1.8	-0.217190	0.870540	96.8	0.170770	0.701320
3.7	-0.225450	0.874170	81.5	0.101990	0.731460
5.5	-0.240400	0.880720	72.2	0.070302	0.745290
8.1	-0.185450	0.856640	66.6	-0.034561	0.790920
13.3	-0.011084	0.780710	62.4	-0.099019	0.818940
23.1	0.189820	0.692940	57.5	-0.095448	0.817390
33.1	0.372050	0.611270	52.2	-0.061991	0.802840
43.0	0.249720	0.666410	43.0	-0.038684	0.792710
52.2	0.000301	0.775760	33.1	-0.002229	0.776860
57.5	-0.191220	0.859170	23.1	0.040257	0.758380
62.4	-0.294490	0.904580	13.3	-0.088712	0.814460
66.6	-0.160150	0.845580	8.1	-0.281560	0.898860
72.2	-0.062689	0.803140	5.5	-0.263220	0.890770
81.5	0.032740	0.761650	3.7	-0.280410	0.898350
89.0	0.053306	0.752690	1.8	-0.226500	0.874620
96.8	0.172240	0.700680			

125209-213B

Table B-9. Tabulated Data for Test 273-15, Condition 1.00.137.002 (Continued)

• ENGINE 4 030 deg CORE COWL

COND. 1.00.137.002
OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.210300	0.683890
15.5	0.231120	0.674670
24.0	-0.016584	0.783110
29.2	-0.156190	0.843860
37.9	-0.176970	0.852940
44.7	-0.262610	0.890500
49.9	-0.204530	0.864990
53.1	-0.420770	0.960970
57.0	-0.235060	0.878390
58.2	-0.239130	0.880170
62.7	-0.556630	1.023200
64.9	-0.518630	1.005600
68.1	-0.142890	0.838050
69.1	-0.048471	0.796970
70.2	-0.100640	0.819660
74.0	-0.198070	0.862160
77.4	-0.314640	0.913510
80.8	-0.242190	0.881510
83.8	-0.258170	0.888550
86.7	-0.245580	0.883010
90.1	-0.114470	0.825680
92.0	-0.116490	0.826560
95.4	-0.018049	0.783740
99.4	0.081384	0.740460

• ENGINE 4 330 deg CORE COWL

COND. 1.00.137.002
INBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.416240	0.590930
15.5	-0.044587	0.795280
24.0	0.097010	0.733650
29.2	0.164410	0.704130
37.9	0.072350	0.744400
44.7	-0.054984	0.799800
49.9	-0.013609	0.781820
53.1	-0.064558	0.803950
57.0	-0.187600	0.857580
58.2	-0.289440	0.902340
62.7	-0.275400	0.896140
64.9	-0.312490	0.912550
68.1	-0.310140	0.911510
69.1	-0.369150	0.937780
70.2	-0.463000	0.980110
74.0	-0.480840	0.988250
77.4	-0.444560	0.971730
80.8	-0.337550	0.923670
83.8	-0.214650	0.869430
86.7	-0.248150	0.884140
90.1	-0.258370	0.888640
92.0	-0.142780	0.838010
95.4	-0.043007	0.794590
99.4	-0.017252	0.783400

125209-214B

Table B-9. Tabulated Data for Test 273-15, Condition 1.00.137.002 (Continued)

• ENGINE 4 060 deg INLET RADIAL

COND. 1.00.137.002

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
44.1	0.618060	0.493450	2.7	-1.044200	1.269900
32.2	****	****	6.1	-0.777310	1.129200
23.1	****	****	12.6	-0.594390	1.040800
16.6	0.222420	0.678520	17.0	-0.524130	1.008100
10.2	****	****	26.3	-0.309130	0.911050
4.9	0.317490	0.636050	32.7	-0.323920	0.917610
2.0	0.660370	0.471690	43.2	-0.269310	0.893450
0.0	0.669700	0.466820			

• ENGINE 4 180 deg INLET RADIAL

COND. 1.00.137.002

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
42.5	0.583370	0.510880	6.2	-0.039285	0.792960
31.7	0.380800	0.607260	9.5	-0.314960	0.913630
24.4	0.129150	0.719580	13.2	-0.366430	0.936550
17.8	0.066932	0.746750	17.8	-0.303250	0.908440
11.1	-0.156430	0.843950	27.2	-0.082764	0.811860
5.5	0.013769	0.769900	34.5	-0.256160	0.887650
2.4	0.379900	0.607670	45.5	-0.194070	0.860400
0.0	****	****			

• ENGINE 4 300 deg INLET RADIAL

COND. 1.00.137.002

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
42.3	0.598060	0.503540	2.7	-1.042900	1.269100
32.2	0.431160	0.583980	5.8	-0.731960	1.106800
22.7	0.263900	0.660080	12.7	-0.617330	1.051700
16.4	0.179870	0.697310	17.1	-0.490180	0.992510
9.9	0.068149	0.746230	26.4	-0.485200	0.990230
4.7	0.228010	0.676050	33.0	-0.438280	0.968880
2.0	0.660280	0.471750	43.3	-0.361000	0.934130
0.0	0.748190	0.424390			

125209-215B

Table B-9. Tabulated Data for Test 273-15, Condition 1.00.137.002 (Concluded)

● WBL 445

COND. 1.00.137.003

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.777040	1.175100
2.0	-1.012900	1.309300
3.0	-1.173800	1.412100
5.0	-1.301900	1.503300
7.5	-1.305300	1.505800
10.0	-1.204700	1.433300
15.0	-0.456150	1.012600
20.0	-0.570690	1.068600
22.5	-0.550090	1.058400
25.0	-0.594850	1.080700
30.0	-0.605970	1.086200
35.0	-0.653810	1.110500
40.0	-0.734030	1.152200
45.0	-0.567300	1.066900
50.0	-0.552320	1.059500
52.4	-0.520420	1.043800
55.0	-0.548460	1.057600
60.0	-0.463400	1.016100
65.0	-0.370610	0.971810
70.0	-0.292810	0.935370
75.0	-0.188420	0.887200
80.0	-0.088397	0.841600

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	-0.026633	0.813610
60.0	-0.024485	0.812640
55.0	-0.025555	0.813130
50.0	-0.022327	0.811670
45.0	-0.013730	0.807770
40.0	-0.012116	0.807040
35.0	-0.018832	0.810080
30.0	-0.066426	0.831640
25.0	-0.095994	0.845060
20.0	-0.128000	0.859610
15.0	-0.223720	0.903410
10.0	0.075811	0.767260
5.0	0.393890	0.620940
3.0	0.443910	0.597090
2.0	0.487180	0.576140
1.0	0.525910	0.557120

● WBL 470

COND. 1.00.137.003

UPPER SURFACE

X/C - %	CP	LOCAL MACH
11.0	-0.804380	1.189900
20.0	-0.586810	1.076600
30.0	-0.639670	1.103300
40.0	-0.682810	1.125400
50.0	-0.569020	1.067800
60.0	****	****

● WBL 510

COND. 1.00.137.003

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.418330	0.994450
2.0	-0.571830	1.069200
3.0	-0.754200	1.162800
5.0	-0.944510	1.268600
7.5	-0.934880	1.263000
10.0	-0.514050	1.040700
15.0	-0.638470	1.102700
20.0	-0.699450	1.134000
22.5	-0.682460	1.125200
25.0	-0.708520	1.138800
27.5	-0.686050	1.127100
30.0	-0.685860	1.127000
35.0	-0.659430	1.113400
40.0	-0.632050	1.099400
45.0	-0.584860	1.075700
47.5	-0.615440	1.091000
50.0	-0.629970	1.098400
52.4	-0.540670	1.053700
55.0	-0.565600	1.066100
60.0	-0.491580	1.029700
65.0	-0.405120	0.988160
70.0	-0.315250	0.945820

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	-0.035109	0.817440
60.0	-0.034873	0.817340
55.0	-0.042516	0.820800
50.0	-0.063348	0.830250
45.0	-0.009867	0.806020
40.0	0.082539	0.764220
35.0	0.044559	0.781400
30.0	0.054285	0.777000
25.0	0.091801	0.760020
20.0	0.105000	0.754040
15.0	0.161270	0.728500
10.0	0.121900	0.746370
5.0	0.203190	0.703390
3.0	0.224960	0.699440
2.0	0.160580	0.728810
1.0	0.168920	0.725020

125209-207C

Table B-10. Tabulated Data for Test 273-15, Condition 1.00.137.003

- ENGINE 3 WL 180

COND. 1.00.137.003

INBOARD SURFACE X/C - %	CP	LOCAL MACH	OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
1.7	0.156180	0.730820	78.7	0.012592	0.795870
3.3	0.106730	0.753270	65.1	0.085349	0.762950
5.1	0.133850	0.740960	47.6	0.129300	0.743030
7.5	0.303150	0.663430	34.9	0.080378	0.765200
10.0	0.496680	0.571520	29.6	0.042729	0.782240
12.8	0.539380	0.550440	26.1	0.044529	0.781420
16.0	0.374050	0.630310	21.4	0.065533	0.771920
21.4	-0.041750	0.820460	16.0	-0.087151	0.841040
26.1	-0.207070	0.895770	12.8	-0.096735	0.845390
29.6	-0.181170	0.883890	10.0	-0.079042	0.837370
34.9	-0.087434	0.841180	7.5	-0.057938	0.827800
47.6	-0.074206	0.835170	5.1	-0.046621	0.822670
65.1	0.056164	0.776150	3.3	0.038199	0.784290
78.7	0.005201	0.799210	1.7	-0.067073	0.831940

- ENGINE 3 WL 155

COND. 1.00.137.003

INBOARD SURFACE X/C - %	CP	LOCAL MACH	OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
7.5	-0.093271	0.843830	90.0	0.111630	0.751040
12.3	-0.036506	0.818080	82.8	0.132000	0.741800
21.5	0.168500	0.725220	75.9	0.067058	0.771230
30.4	0.326350	0.652640	67.2	0.069027	0.770330
39.3	0.226850	0.698580	62.0	-0.022084	0.811560
48.5	0.074123	0.768030	57.2	-0.079172	0.837430
53.8	-0.101370	0.847500	53.8	-0.056789	0.827280
57.2	****	****	48.5	-0.099489	0.846650
62.0	-0.204730	0.894690	39.3	-0.045154	0.822000
67.2	-0.108190	0.850600	30.4	-0.009150	0.805700
75.9	-0.002628	0.802760	21.5	0.049981	0.778950
82.8	0.031022	0.787530	12.3	-0.144070	0.866940
90.0	0.065844	0.771780	7.5	-0.301840	0.939580
			5.1	-0.289160	0.933680

- ENGINE 3 030 deg CORE COWL

COND. 1.00.137.003

OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
3.6	0.294270	0.667530
24.0	-0.005936	0.804250
29.2	-0.108040	0.850530
37.9	-0.297230	0.937430
44.7	-0.041447	0.820320
49.9	-0.288590	0.933410
53.1	-0.225010	0.904010
57.0	-0.223660	0.903390
58.2	-0.383840	0.978070
62.7	-0.374060	0.973440
64.9	-0.432290	1.001100
68.1	-0.471290	1.019900
69.1	-0.502050	1.034800
70.2	-0.383140	0.977740
74.0	-0.273000	0.926180
77.4	-0.222420	0.902820
80.8	-0.268290	0.923990
83.8	-0.298740	0.938130
86.7	-0.151430	0.870300
90.1	-0.106470	0.849820
92.0	-0.054174	0.826090
95.4	0.091778	0.760030
99.4	0.054616	0.776860

Table B-10. Tabulated Data for Test 273-15, Condition 1.00.137.003 (Continued)

125209-209C

• ENGINE 3 330 deg CORE COWL

COND. 1.00.137.003
INBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.365510	0.634330
24.0	0.315370	0.657750
29.2	0.112620	0.750590
37.9	0.210010	0.706280
44.7	0.207290	0.707520
49.9	-0.001069	0.802050
53.1	-0.047716	0.823160
57.0	-0.002175	0.802550
58.2	0.045161	0.781130
62.7	-0.003690	0.803230
64.9	-0.070276	0.833390
68.1	-0.293970	0.935910
69.1	-0.479320	1.023800
70.2	-0.317640	0.946940
74.0	-0.316060	0.946210
77.4	-0.425020	0.997650
80.8	-0.377590	0.975110
83.8	-0.415570	0.993140
86.7	-0.205860	0.895210
90.1	-0.154270	0.871590
92.0	-0.144560	0.867160
95.4	-0.126850	0.859090
99.4	-0.056548	0.827160

• ENGINE 3 030 deg INLET RADIAL

COND. 1.00.137.003
INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.206800	0.707740
5.0	0.351640	0.640820
3.3	0.563850	0.538170
1.3	0.883690	0.354510
0.2	1.128100	0.135480
0.0	0.645980	0.495920

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.689910	1.129100
1.1	-1.039800	1.325800
2.7	-0.884310	1.234100
5.8	-0.804770	1.190000
8.8	-0.841560	1.210200
12.5	-1.103900	1.366100
16.7	-0.589000	1.077700
21.1	-0.452320	1.010700
26.1	-0.345640	0.960050
33.5	-0.367540	0.970360
45.6	-0.362370	0.967920
57.2	-0.150010	0.869640
64.5	-0.087519	0.841210
71.8	-0.010079	0.806120
82.4	0.108020	0.752670
99.4	0.269800	0.678840

• ENGINE 3 090 deg INLET RADIAL

COND. 1.00.137.003
INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.060623	0.774130
5.0	0.159330	0.729150
3.3	0.310600	0.659970
1.3	0.717930	0.457120
0.1	****	****
0.0	0.864660	0.370190

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.210280	0.897230
1.1	-0.430320	1.000200
2.8	-0.352110	0.963090
6.1	-0.513730	1.043000
9.0	-0.535640	1.051300
12.9	-0.571450	1.069000
17.4	-0.359890	0.966760
22.7	-0.235480	0.908330
27.7	-0.287130	0.932730
34.7	-0.297220	0.937420
46.2	-0.313220	0.944880
57.5	-0.247330	0.914290
64.7	-0.115070	0.853720
71.9	-0.073942	0.835050
82.4	0.037311	0.784680
99.6	0.223010	0.698040

125209-210C

Table B-10. Tabulated Data for Test 273-15, Condition 1.00.137.003 (Continued)

- ENGINE 3 150 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
9.0	-0.041059	0.820140
5.2	0.109960	0.751800
3.6	0.301940	0.663980
1.5	0.671880	0.482170
0.2	1.117400	0.151390
0.0	0.961900	0.302900

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	0.139210	0.738530
1.2	-0.121280	0.856550
2.9	-0.183740	0.885060
6.2	-0.325600	0.950660
9.4	-0.425280	0.997770
14.5	-0.467620	1.018100
18.2	-0.450430	1.009800
22.7	-0.312350	0.944470
27.7	-0.335060	0.955090
34.5	-0.259540	0.919940
45.7	-0.215560	0.899660
57.0	-0.113770	0.853130
63.9	-0.096854	0.845450
71.0	-0.072852	0.834550
81.3	0.021261	0.791940
99.4	0.209500	0.706510

- ENGINE 3 210 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
8.2	-0.055039	0.826480
5.2	0.157910	0.730030
3.6	0.359810	0.637000
1.5	0.699220	0.467410
0.3	1.122600	0.143900
0.0	0.935910	0.322010

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.5	-0.016392	0.808980
1.2	-0.338700	0.956800
2.9	-0.289470	0.933820
6.2	-0.657790	1.112500
9.3	-0.560330	1.063500
14.4	-0.575740	1.071100
18.1	-0.431050	1.000500
22.4	-0.355570	0.964730
27.5	-0.349060	0.961670
34.2	-0.366780	0.970010
45.5	-0.278470	0.928710
56.9	-0.178420	0.882640
63.9	-0.150060	0.869680
70.8	-0.113420	0.852980
81.0	0.022081	0.791580
99.0	0.176200	0.721710

125209-211C

Table B-10. Tabulated Data for Test 273-15, Condition 1.00.137.003 (Continued)

• ENGINE 3 270 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
8.1	0.118070	0.748110
5.5	0.253280	0.686440
3.7	0.446390	0.595900
1.3	0.774060	0.425330
0.1	****	****
0.0	0.766940	0.429460

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.061554	0.829430
1.0	-0.868480	1.225200
2.7	-0.535120	1.051000
6.2	-0.909800	1.248600
9.0	-0.892400	1.238700
12.8	-0.843340	1.211200
17.2	-0.589000	1.077700
21.7	-0.306070	0.941540
26.6	-0.297450	0.937520
33.8	-0.257850	0.919150
45.2	-0.314680	0.945560
56.6	-0.336930	0.955960
63.9	-0.207190	0.895810
71.1	-0.156820	0.872750
81.5	-0.021336	0.811210
99.0	0.145910	0.735480

• ENGINE 3 330 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.5	0.266780	0.658800
7.5	0.264800	0.681140
4.8	0.396580	0.619660
3.2	0.560210	0.540010
1.2	0.893040	0.351620
0.2	1.074400	0.203780
0.0	0.661860	0.487520

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.603830	1.085200
1.1	-1.152400	1.397800
2.7	-0.980680	1.289900
5.8	-1.057300	1.336600
8.8	-1.080200	1.351000
12.6	-0.832540	1.205200
17.8	-0.831690	1.204800
21.4	-0.339290	0.957080
26.1	-0.326140	0.950910
33.7	-0.255220	0.917940
45.4	-0.264400	0.922180
57.0	-0.301680	0.939500
64.5	-0.177640	0.882270
71.8	-0.116070	0.854180
82.7	0.021370	0.791890
99.4	0.142430	0.737060

Table B-10. Tabulated Data for Test 273-15, Condition 1.00.137.003 (Continued)

125209-212C

●WBL 809

COND. 1.00.137.003

UPPER SURFACE

X/C - %	CP	LOCAL MACH
2.0	-0.585300	1.075900
3.0	-0.639910	1.103400
5.0	-0.970390	1.283800
7.5	-1.207200	1.435000
10.0	-1.331400	1.525800
15.0	-1.395100	1.576400
20.0	-1.447400	1.620600
22.5	-0.205880	0.895210
25.0	-0.893860	1.239500
30.0	-0.646620	1.106800
35.0	-0.483160	1.025600
40.0	-0.439330	1.004500
45.0	-0.493940	1.030900
50.0	-0.507200	1.037300
52.4	-0.247410	0.914330
55.0	-0.513380	1.040300
60.0	-0.513370	1.040300
65.0	-0.466020	1.017300
70.0	-0.422200	0.996290
75.0	-0.341960	0.958320
80.0	-0.330820	0.953100

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	0.011645	0.796280
60.0	-0.066825	0.831810
55.0	-0.091714	0.843110
50.0	-0.146020	0.867820
45.0	0.273150	0.677290
40.0	0.076846	0.766790
35.0	0.453580	0.592430
30.0	0.193970	0.713600
25.0	-0.182290	0.884390
20.0	-0.214290	0.890070
15.0	-0.239430	0.910640
10.0	-0.134390	0.862520
5.0	0.540340	0.549940
3.0	0.574960	0.532560
1.0	0.198950	0.711330

●WBL 834

COND. 1.00.137.003

UPPER SURFACE

X/C - %	CP	LOCAL MACH
12.0	-1.066200	1.342200
24.0	-0.582830	1.074600
30.0	-0.606210	1.086400
40.0	-0.577520	1.072000
50.0	-0.496560	1.032100
60.0	-0.357970	0.965840

●WBL 870

COND. 1.00.137.003

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	-0.238790	0.910350
2.0	-0.477840	1.023000
3.0	-0.505490	1.036500
5.0	-1.165200	1.406300
7.5	-1.011700	1.308600
10.0	-1.045800	1.329400
15.0	-0.627100	1.096900
20.0	-0.629300	1.098000
22.5	-0.600680	1.083600
25.0	-0.648640	1.107900
30.0	-0.562500	1.064500
35.0	-0.548310	1.057500
40.0	-0.540970	1.053900
45.0	-0.560300	1.063400
47.5	-0.552710	1.059700
50.0	-0.548320	1.057500
52.4	-0.554670	1.060600
55.0	-0.518950	1.043100
60.0	-0.436250	1.003000
65.0	-0.360640	0.967100
70.0	-0.312930	0.944730

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	0.066806	0.771330
60.0	0.036599	0.785000
55.0	0.029041	0.788410
50.0	0.042692	0.782240
45.0	0.022708	0.791280
40.0	0.022955	0.791170
35.0	0.011992	0.796130
30.0	0.015162	0.794700
25.0	0.016378	0.794140
20.0	0.033187	0.786540
15.0	0.056330	0.776070
10.0	0.110900	0.751360
7.5	0.112360	0.750700
5.0	0.116260	0.748930
3.0	0.103110	0.754890
2.0	0.073141	0.768470
1.0	0.047561	0.780040

125209-212C

Table B-10. Tabulated Data for Test 273-15, Condition 1.00.137.003 (Continued)

• ENGINE 4 WL 180

COND. 1.00.137.003

INBOARD SURFACE X/C - %	CP	LOCAL MACH	OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
6.7	0.410200	0.613200	96.4	0.136120	0.739930
8.7	0.526440	0.556860	81.5	0.118660	0.747860
10.9	0.562110	0.539060	58.9	0.022556	0.791360
14.5	0.459450	0.589610	44.2	-0.016712	0.809120
17.9	0.219690	0.701860	37.7	0.000342	0.801410
21.6	0.111850	0.750940	33.7	0.036213	0.785180
28.4	-0.148390	0.868910	28.4	0.073454	0.768330
33.7	-0.297790	0.937690	21.6	0.119330	0.747550
37.7	-0.283110	0.930870	17.9	0.064199	0.772520
44.2	-0.280080	0.929460	14.5	-0.022889	0.811920
58.9	-0.046553	0.822630	10.9	-0.146740	0.868150
81.5	0.100720	0.755990	8.7	-0.151970	0.870550
96.4	0.139880	0.738220	6.7	-0.101490	0.847560
			4.7	-0.112420	0.852530

• ENGINE 4 WL 155

COND. 1.00.137.003

INBOARD SURFACE X/C - %	CP	LOCAL MACH	OUTBOARD SURFACE X/C - %	CP	LOCAL MACH
1.8	-0.210150	0.897180	96.8	0.172110	0.723570
3.7	-0.230010	0.906320	89.0	0.084667	0.763260
5.5	-0.253990	0.917380	81.5	0.100180	0.756230
8.1	-0.195800	0.890590	72.2	0.040923	0.783060
13.3	-0.028443	0.814440	66.6	-0.050104	0.824250
23.1	0.166550	0.726100	62.4	-0.111410	0.852070
33.1	0.363100	0.635460	57.5	-0.127980	0.859610
43.0	0.227160	0.698430	52.2	-0.086993	0.840970
52.2	-0.033930	0.816920	43.0	-0.045684	0.822250
57.5	-0.230800	0.906680	33.1	-0.028856	0.814620
62.4	-0.386130	0.979150	23.1	0.042833	0.782190
66.6	-0.200540	0.892770	13.3	-0.103130	0.848300
72.2	-0.061295	0.829320	8.1	-0.304540	0.940840
81.5	0.028242	0.788790	5.5	-0.287490	0.932910
89.0	0.039547	0.783680	3.7	-0.293170	0.935550
96.8	0.155630	0.731060	1.8	-0.215150	0.899480

Table B-10. Tabulated Data for Test 273-15, Condition 1.00.137.003 (Continued)

125209-213C

• ENGINE 4 030 deg CORE COWL

COND. 1.00.137.003
OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.231780	0.696310
15.5	0.259600	0.683540
24.0	-0.011948	0.806970
29.2	-0.126390	0.858880
37.9	-0.251420	0.916190
44.7	-0.269280	0.924450
49.9	-0.208240	0.896300
53.1	-0.260570	0.920410
57.0	-0.274550	0.926890
58.2	-0.221390	0.902340
62.7	-0.464400	1.016500
64.9	-0.566670	1.066600
68.1	-0.426910	0.998550
69.1	-0.144450	0.867110
70.2	-0.213140	0.898550
74.0	-0.264770	0.922360
77.4	-0.262810	0.921450
80.8	-0.362910	0.968180
83.8	-0.177610	0.882260
86.7	-0.150730	0.869970
90.1	-0.155440	0.872120
92.0	-0.164940	0.876470
95.4	-0.021455	0.811270
99.4	0.033870	0.786240

• ENGINE 4 330 deg CORE COWL

COND. 1.00.137.003
INBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.396460	0.619730
15.5	-0.063905	0.830500
24.0	0.082052	0.764440
29.2	0.061870	0.773570
37.9	0.125800	0.744600
44.7	-0.105640	0.849440
49.9	-0.123300	0.857470
53.1	-0.112830	0.852720
57.0	-0.024702	0.812730
58.2	-0.149730	0.869510
62.7	-0.318860	0.947520
64.9	-0.440560	1.005100
68.1	-0.433310	1.002600
69.1	-0.455960	1.012500
70.2	-0.444870	1.007200
74.0	-0.512410	1.039900
77.4	-0.562510	1.064500
80.8	-0.503740	1.035600
83.8	-0.308890	0.942860
86.7	-0.190900	0.888340
90.1	-0.189620	0.887750
92.0	-0.160780	0.874560
95.4	-0.054818	0.826380
99.4	-0.010038	0.806100

125209-214C

Table B-10. Tabulated Data for Test 273-15, Condition 1.00.137.003 (Continued)

● ENGINE 4 060 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE			OUTER SURFACE		
X/C - %	CP	LOCAL MACH	X/C - %	CP	LOCAL MACH
44.1	0.654670	0.491330	2.7	-1.013400	1.309600
32.2	0.240360	0.692380	6.1	-0.945670	1.269300
23.1	0.621470	0.508730	12.6	-0.944450	1.268600
16.6	0.282050	0.673180	17.0	-0.471980	1.020200
10.2	****	****	26.3	-0.306550	0.941770
4.9	0.363440	0.635300	32.7	-0.333660	0.954440
2.0	0.687880	0.473560	43.2	-0.282670	0.930650
0.0	0.686010	0.474570			

● ENGINE 4 180 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE			OUTER SURFACE		
X/C - %	CP	LOCAL MACH	X/C - %	CP	LOCAL MACH
42.5	0.622970	0.507950	6.2	-0.190960	0.888370
31.7	0.432020	0.602790	9.5	-0.377150	0.974900
24.4	0.199230	0.711200	13.2	-0.568660	1.067600
17.8	0.150810	0.733250	17.8	-0.348700	0.961490
11.1	-0.040953	0.820090	27.2	-0.105440	0.849350
5.5	0.135740	0.740100	34.5	-0.289220	0.933700
2.4	0.489450	0.575030	45.5	-0.215820	0.899780
0.0	****	****			

● ENGINE 4 300 deg INLET RADIAL

COND. 1.00.137.003

INNER SURFACE			OUTER SURFACE		
X/C - %	CP	LOCAL MACH	X/C - %	CP	LOCAL MACH
42.3	0.634140	0.502130	2.7	-0.991590	1.296500
32.2	0.477710	0.580760	5.8	-0.800960	1.188000
22.7	0.319500	0.655830	12.7	-0.780230	1.176800
16.4	0.238050	0.693440	17.1	-0.678150	1.123000
9.9	0.127300	0.743930	26.4	-0.446420	1.007900
4.7	0.274170	0.676820	33.0	-0.438360	1.004300
2.0	0.686840	0.474130	43.4	-0.364320	0.969030
0.0	0.771940	0.426560			

Table B-10. Tabulated Data for Test 273-15, Condition 1.00.137.003 (Concluded)

125209-215C

● WBL 445

COND. 1.00.137.004

UPPER SURFACE X/C - %	CP	LOCAL MACH
1.0	-0.141780	0.981710
2.0	-0.424280	1.142200
3.0	-0.521560	1.201900
5.0	-0.714720	1.330700
7.5	-0.788600	1.384600
10.0	-0.756340	1.360700
15.0	-0.680300	1.306500
20.0	-0.739090	1.348100
22.5	-0.482260	1.177500
25.0	-0.469830	1.169800
30.0	-0.461470	1.164700
35.0	-0.505640	1.192000
40.0	-0.600750	1.252800
45.0	-0.579940	1.239200
50.0	-0.589620	1.245600
52.4	-0.651980	1.287100
55.0	-0.724010	1.337300
60.0	-0.781520	1.379300
65.0	-0.782850	1.380300
70.0	-0.723580	1.337000
75.0	-0.629870	1.272200
80.0	-0.278380	1.057400

LOWER SURFACE X/C - %	CP	LOCAL MACH
65.0	-0.126890	0.973630
60.0	-0.117520	0.968580
55.0	-0.095874	0.956920
50.0	-0.072029	0.944140
45.0	-0.029275	0.921360
40.0	0.009635	0.900830
35.0	0.000549	0.905620
30.0	-0.024504	0.918880
25.0	-0.775220	1.374700
20.0	-0.665560	1.296400
15.0	-0.396200	1.125500
10.0	-0.119700	0.969780
5.0	0.240600	0.780540
3.0	0.287600	0.756180
2.0	0.336040	0.731000
1.0	0.346370	0.725610

● WBL 470

COND. 1.00.137.004

UPPER SURFACE X/C - %	CP	LOCAL MACH
11.0	-0.704410	1.323400
20.0	-0.431870	1.146700
30.0	-0.466490	1.167800
40.0	-0.616580	1.263300
50.0	-0.649090	1.285200
60.0	****	****

● WBL 510

COND. 1.00.137.004

UPPER SURFACE X/C - %	CP	LOCAL MACH
1.0	-0.094694	0.956270
2.0	-0.186080	1.005900
3.0	-0.301120	1.070200
5.0	-0.463840	1.166100
7.5	-0.553400	1.222100
10.0	-0.480360	1.176300
15.0	-0.466740	1.167900
20.0	-0.390700	1.122200
22.5	-0.430440	1.145900
25.0	-0.497960	1.187200
27.5	-0.490710	1.182700
30.0	-0.492100	1.183500
35.0	-0.528880	1.206600
40.0	-0.578820	1.238500
45.0	-0.684130	1.309200
47.5	-0.637190	1.277100
50.0	-0.658950	1.291900
52.4	-0.674630	1.302700
55.0	-0.704370	1.323400
60.0	-0.800200	1.393400
65.0	-0.815250	1.404800
70.0	-0.836660	1.421400

LOWER SURFACE X/C - %	CP	LOCAL MACH
65.0	-0.098097	0.958110
60.0	-0.126930	0.973650
55.0	-0.161210	0.992300
50.0	-0.175630	1.000200
45.0	-0.089653	0.953560
40.0	0.008251	0.901560
35.0	-0.044726	0.929580
30.0	-0.013356	0.912960
25.0	0.036411	0.886740
20.0	0.038521	0.885630
15.0	0.045105	0.882190
10.0	-0.031200	0.922380
5.0	-0.042976	0.928680
3.0	-0.100990	0.959710
2.0	-0.316020	1.078800
1.0	-0.295480	1.067100

125209-208

Table B-11. Tabulated Data for Test 273-15, Condition 1.00.137.004

● ENGINE 3 WL 180

COND. 1.00.137.004

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
1.7	0.266210	0.767250
3.3	0.245240	0.778130
5.1	0.034515	0.887750
7.5	0.346460	0.725560
10.0	0.451110	0.670620
12.8	0.384430	0.705730
16.0	0.168690	0.817820
21.4	-0.189510	1.007800
26.1	-0.335150	1.089800
29.6	-0.426190	1.143400
34.9	-0.495500	1.185600
47.6	-0.053968	0.934510
65.1	0.037056	0.886420
78.7	-0.042226	0.928280

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
78.7	-0.075859	0.946190
65.1	0.023565	0.893500
47.6	0.052650	0.878250
34.9	-0.069116	0.942590
29.6	-0.235530	1.033300
26.1	-0.372890	1.111800
21.4	-0.130720	0.975710
16.0	-0.134060	0.977500
12.8	-0.126520	0.973430
10.0	-0.061449	0.938500
7.5	-0.020162	0.916560
5.1	-0.003418	0.907700
3.3	0.166630	0.818880
1.7	-0.002395	0.907160

● ENGINE 3 WL 155

COND. 1.00.137.004

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
7.5	-0.293640	1.066000
12.3	-0.056697	0.935970
21.5	0.142990	0.831160
30.4	0.301860	0.748770
39.3	0.147420	0.828850
48.5	-0.004926	0.908500
53.8	-0.164590	0.994130
57.2	****	****
62.0	-0.617940	1.264300
67.2	-0.844970	1.428000
75.9	-0.170310	0.997260
82.8	0.102610	0.852150
90.0	0.096863	0.855130

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
90.0	0.084385	0.861650
82.8	0.108170	0.849260
75.9	0.018825	0.896000
67.2	-0.013655	0.913110
62.0	-0.309200	1.074900
57.2	-0.380600	1.116300
53.8	-0.236860	1.034000
48.5	-0.151500	0.986970
39.3	-0.013068	0.912820
30.4	0.049325	0.879970
21.5	0.092837	0.857250
12.3	-0.134090	0.977540
7.5	-0.534000	1.209800
5.1	-0.508170	1.193600

● ENGINE 3 030 deg CORE COWL

COND. 1.00.137.004

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.458110	0.666910
24.0	-0.022243	0.917650
29.2	0.001647	0.905030
37.9	-0.121560	0.970740
44.7	0.040254	0.884730
49.9	-0.157190	0.990090
53.1	-0.113750	0.966540
57.0	-0.318990	1.080500
58.2	-0.289820	1.063800
62.7	-0.409590	1.133400
64.9	-0.514920	1.197800
68.1	-0.436830	1.149800
69.1	-0.455420	1.161000
70.2	-0.433950	1.148000
74.0	-0.558830	1.225600
77.4	-0.587280	1.244000
80.8	-0.581340	1.240200
83.8	-0.594770	1.248900
86.7	-0.524370	1.203700
90.1	-0.473000	1.171800
92.0	-0.273590	1.054700
95.4	-0.025090	0.919190
99.4	-0.061567	0.938570

125209-209D

Table B-11. Tabulated Data for Test 273-15, Condition 1.00.137.004 (Continued)

- ENGINE 3 330 deg CORE COWL

COND. 1.00.137.004

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.480410	0.655060
24.0	0.400480	0.697310
29.2	0.071524	0.868360
37.9	-0.087182	0.952280
44.7	0.264850	0.767960
49.9	0.109590	0.848530
53.1	-0.085631	0.951440
57.0	-0.087522	0.952440
58.2	-0.123830	0.971980
62.7	-0.054105	0.934580
64.9	-0.120650	0.970270
68.1	-0.302190	1.070900
69.1	-0.443660	1.153900
70.2	-0.324470	1.083600
74.0	-0.304800	1.072400
77.4	-0.507370	1.193100
80.8	-0.531010	1.207900
83.8	-0.601690	1.253500
86.7	-0.596940	1.250400
90.1	-0.684800	1.309700
92.0	-0.697730	1.318700
95.4	-0.629660	1.272100
99.4	-0.646530	1.283400

- ENGINE 3 030 deg INLET RADIAL

COND. 1.00.137.004

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.237300	0.782250
5.0	0.357850	0.719630
3.3	0.550350	0.617450
1.3	0.867730	0.430690
0.2	1.174600	0.152860
0.0	0.827650	0.456560

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.242860	1.037300
1.1	-0.544190	1.216200
2.7	-0.440920	1.152200
5.8	-0.447460	1.156200
8.8	-0.561310	1.227200
12.5	-0.769230	1.370200
16.7	-0.793940	1.388600
21.1	-0.885240	1.460300
26.1	-0.646500	1.283400
33.5	-0.748620	1.355000
45.6	-0.642930	1.281000
57.2	-0.375300	1.113200
64.5	-0.146470	0.984260
71.8	-0.054618	0.934850
82.4	0.070299	0.869000
99.4	0.242810	0.779390

- ENGINE 3 090 deg INLET RADIAL

COND. 1.00.137.004

INNER SURFACE

X/C - %	CP	LOCAL MACH
7.7	0.214690	0.793960
5.0	0.305400	0.746930
3.3	0.498800	0.645250
1.3	0.825300	0.458070
0.1	****	****
0.0	0.878530	0.423520

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.142450	0.982050
1.1	-0.426770	1.143700
2.8	-0.275540	1.055700
6.1	-0.461500	1.164700
9.0	-0.576070	1.236700
12.9	-0.637900	1.277600
17.4	-0.582260	1.240800
22.7	-0.469040	1.169300
27.7	-0.473650	1.172200
34.7	-0.541320	1.214400
46.2	-0.487970	1.181000
57.5	-0.634410	1.275300
64.7	-0.507130	1.193000
71.9	-0.062408	0.939000
82.4	0.041893	0.883870
99.6	0.234990	0.783440

Table B-11. Tabulated Data for Test 273-15, Condition 1.00.137.004 (Continued)

125209-210D

• ENGINE 3 150 deg INLET RADIAL

COND. 1.00.137.004

INNER SURFACE

X/C - %	CP	LOCAL MACH
9.0	0.200610	0.801260
5.2	0.383260	0.706340
3.6	0.556130	0.614300
1.5	0.883480	0.420210
0.2	1.174000	0.153850
0.0	0.852280	0.440780

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.4	-0.041906	0.928080
1.2	-0.680370	1.306600
2.9	-0.342460	1.094000
6.2	-0.473180	1.171900
9.4	-0.568150	1.231600
14.5	-0.804800	1.396800
18.2	-0.780870	1.378800
22.7	-0.730230	1.341800
27.7	-0.754890	1.359600
34.5	-0.635360	1.275900
45.7	-0.627520	1.270600
57.0	-0.491080	1.182900
63.9	-0.410260	1.133900
71.0	-0.055741	0.935450
81.3	0.035914	0.887010
99.4	0.233310	0.784310

• ENGINE 3 210 deg INLET RADIAL

COND. 1.00.137.004

INNER SURFACE

X/C - %	CP	LOCAL MACH
8.2	0.219970	0.791220
5.2	0.409270	0.692690
3.6	0.589280	0.596150
1.5	0.892560	0.414080
0.3	1.168500	0.162580
0.0	0.859290	0.436230

OUTER SURFACE

X/C - %	CP	LOCAL MACH
0.5	-0.135230	0.978170
1.2	-0.638780	1.278200
2.9	-0.522880	1.202800
6.2	-0.565730	1.230100
9.3	-0.662020	1.294000
14.4	-0.778430	1.377000
18.1	-0.705400	1.324100
22.4	-0.773210	1.373100
27.5	-0.713540	1.329900
34.2	-0.778010	1.376700
45.5	-0.738960	1.348000
56.9	-0.555790	1.223700
63.9	-0.487100	1.180400
70.8	-0.063224	0.939440
81.0	0.066885	0.870790
99.0	0.231070	0.785480

125209-211D

Table B-11. Tabulated Data for Test 273-15, Condition 1.00.137.004 (Continued)

- ENGINE 3 270 deg INLET RADIAL

COND. 1.00.137.004

INNER SURFACE X/C - %	CP	LOCAL MACH
8.1	0.242890	0.779360
5.5	0.375610	0.710340
3.7	0.554200	0.615330
1.3	0.853440	0.440010
0.1	1.195500	0.114560
0.0	0.822530	0.459820

OUTER SURFACE X/C - %	CP	LOCAL MACH
0.4	-0.063521	0.939580
1.0	-0.701270	1.321200
2.7	-0.522650	1.202600
6.2	-0.578580	1.238400
9.0	-0.659820	1.292500
12.8	-0.747190	1.354000
17.2	-0.633780	1.274800
21.7	-0.518720	1.200200
26.6	-0.512320	1.196100
33.8	-0.484250	1.178700
45.2	-0.531060	1.207900
56.6	-0.722530	1.336300
63.9	-0.434600	1.148400
71.1	-0.115050	0.967240
81.5	0.044384	0.882560
99.0	0.221300	0.790540

- ENGINE 3 330 deg INLET RADIAL

COND. 1.00.137.004

INNER SURFACE X/C - %	CP	LOCAL MACH
7.5	0.284950	0.757550
4.8	0.409850	0.692370
3.2	0.542850	0.621500
1.2	0.882300	0.420990
0.2	1.119400	0.225590
0.0	0.863920	0.433180

OUTER SURFACE X/C - %	CP	LOCAL MACH
0.4	-0.141810	0.981730
1.1	-0.689470	1.312900
2.7	-0.504920	1.191500
5.8	-0.630040	1.272300
8.8	-0.712380	1.329000
12.6	-0.535470	1.210700
17.8	-0.649500	1.285400
21.4	-0.669690	1.299200
26.1	-0.650610	1.286200
33.7	-0.509420	1.194300
45.4	-0.506240	1.192300
57.0	-0.662640	1.294400
64.5	-0.258440	1.046100
71.8	-0.084623	0.950880
82.7	0.039997	0.884860
99.4	0.172010	0.816090

125209-212D

Table B-11. Tabulated Data for Test 273-15, Condition 1.00.137.004 (Continued)

● WBL 809

COND. 1.00.137.004

UPPER SURFACE

X/C - %	CP	LOCAL MACH
2.0	0.104630	0.851080
3.0	-0.092752	0.955230
5.0	-0.315540	1.078500
7.5	-0.510680	1.195100
10.0	-0.676540	1.303900
15.0	-0.769840	1.370600
20.0	-0.911310	1.481800
22.5	-0.091291	0.954450
25.0	-0.709550	1.327000
30.0	-0.663790	1.295200
35.0	-0.638100	1.277700
40.0	-0.659360	1.292200
45.0	-0.688280	1.312100
50.0	-0.547910	1.218700
52.4	-0.119910	0.969850
55.0	-0.655700	1.289700
60.0	-0.716650	1.332100
65.0	-0.780290	1.378500
70.0	-0.365620	1.107500
75.0	-0.190630	1.008400
80.0	-0.154500	0.988620

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	0.024968	0.892770
60.0	-0.022078	0.917590
55.0	-0.095815	0.956900
50.0	-0.713150	1.329700
45.0	0.116950	0.844700
40.0	-0.054617	0.934860
35.0	0.270270	0.765170
30.0	0.066189	0.871170
25.0	-0.633450	1.274700
20.0	-0.460220	1.164000
15.0	-0.427650	1.144300
10.0	-0.336150	1.090400
5.0	0.267450	0.766630
3.0	0.234280	0.783830
1.0	0.083747	0.861990

● WBL 834

COND. 1.00.137.004

UPPER SURFACE

X/C - %	CP	LOCAL MACH
12.0	-0.719400	1.334000
24.0	-0.769320	1.370200
30.0	-0.695120	1.317100
40.0	-0.680070	1.306500
50.0	-0.767410	1.369000
60.0	-0.203850	1.015600

● WBL 870

COND. 1.00.137.004

UPPER SURFACE

X/C - %	CP	LOCAL MACH
1.0	0.094290	0.856470
2.0	-0.121060	0.970470
3.0	-0.191330	1.008800
5.0	-0.769740	1.370500
7.5	-0.614430	1.261900
10.0	-0.681550	1.307400
15.0	-0.693630	1.315800
20.0	-0.761250	1.364300
22.5	-0.667010	1.297400
25.0	-0.696350	1.317700
30.0	-0.613150	1.261100
35.0	-0.647760	1.284400
40.0	-0.642870	1.281100
45.0	-0.647140	1.283900
47.5	-0.693850	1.316000
50.0	-0.718530	1.333500
52.4	-0.744670	1.352200
55.0	-0.729240	1.341200
60.0	-0.284750	1.060900
65.0	-0.207860	1.017900
70.0	-0.176330	1.000500

LOWER SURFACE

X/C - %	CP	LOCAL MACH
65.0	0.036151	0.886880
60.0	-0.003061	0.907520
55.0	-0.006578	0.909400
50.0	-0.003218	0.904220
45.0	-0.017981	0.915410
40.0	-0.013999	0.913290
35.0	-0.026231	0.919770
30.0	-0.031557	0.922610
25.0	-0.052702	0.933860
20.0	-0.071217	0.943720
15.0	-0.096591	0.957340
10.0	-0.109960	0.964530
7.5	-0.189750	1.008000
5.0	-0.200680	1.014000
3.0	-0.234990	1.033000
2.0	-0.451120	1.158500
1.0	-0.586890	1.243800

125209-212D

Table B-11. Tabulated Data for Test 273-15, Condition 1.00.137.004 (Continued)

• ENGINE 4 WL 180

COND. 1.00.137.004

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
6.7	0.337800	0.730090
8.7	0.402150	0.696440
10.9	0.357990	0.719550
14.5	0.254860	0.773180
17.9	0.051685	0.878770
21.6	-0.039116	0.926640
28.4	-0.318140	1.080000
33.7	-0.457200	1.162100
37.7	-0.574760	1.235900
44.2	-0.787930	1.384300
58.9	-0.024836	0.919040
81.5	0.081237	0.863320
96.4	0.131790	0.836980

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
96.4	0.112940	0.846780
81.5	0.068863	0.869770
58.9	0.002835	0.904420
44.2	-0.157090	0.990090
37.7	-0.232940	1.031900
33.7	-0.256780	1.045300
28.4	-0.066813	0.941420
21.6	0.018434	0.896190
17.9	0.057636	0.875640
14.5	-0.012095	0.912300
10.9	-0.091055	0.954340
8.7	-0.088993	0.953200
6.7	-0.022968	0.918040
4.7	0.008379	0.901480

• ENGINE 4 WL 155

COND. 1.00.137.004

INBOARD SURFACE

X/C - %	CP	LOCAL MACH
1.8	-0.480470	1.176500
3.7	-0.461370	1.164800
5.5	-0.567220	1.231200
8.1	-0.540880	1.214300
13.3	-0.089345	0.953430
23.1	0.132260	0.836750
33.1	0.325300	0.736570
43.0	0.107160	0.849810
52.2	-0.121580	0.970780
57.5	-0.389010	1.121300
62.4	-0.557370	1.224700
66.6	-0.706980	1.325200
72.2	-0.557680	1.225100
81.5	0.003700	0.903970
89.0	0.044653	0.882440
96.8	0.173200	0.815470

OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
96.8	0.152550	0.826180
89.0	0.083462	0.862130
81.5	0.076140	0.865970
72.2	-0.012841	0.912720
66.6	-0.372500	1.111600
62.4	-0.465210	1.167100
57.5	-0.340160	1.092700
52.2	-0.159220	0.991240
43.0	-0.007400	0.909770
33.1	0.054566	0.877240
23.1	0.068891	0.869770
13.3	-0.177340	1.001200
8.1	-0.529390	1.207000
5.5	-0.478870	1.175500
3.7	-0.470820	1.170600
1.8	-0.381930	1.117200

125209-213D

Table B-11. Tabulated Data for Test 273-15, Condition 1.00.137.004 (Continued)

• ENGINE 4 030 deg CORE COWL

COND. 1.00.137.004
OUTBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.463790	0.663820
15.5	0.369220	0.713690
24.0	0.005500	0.903010
29.2	-0.022165	0.917620
37.9	-0.002837	0.907410
44.7	-0.261430	1.047800
49.9	-0.280460	1.058500
53.1	-0.366940	1.108300
57.0	-0.292700	1.065500
58.2	-0.267860	1.051400
62.7	-0.478140	1.174900
64.9	-0.480180	1.176200
68.1	-0.446900	1.155900
69.1	****	****
70.2	-0.493680	1.184600
74.0	-0.558050	1.225200
77.4	-0.523550	1.203200
80.8	-0.595690	1.249600
83.8	-0.539850	1.213600
86.7	-0.559980	1.226400
90.1	-0.488230	1.181200
92.0	-0.346080	1.096200
95.4	-0.123930	0.972080
99.4	0.010576	0.900360

• ENGINE 4 330 deg CORE COWL

COND. 1.00.137.004
INBOARD SURFACE

X/C - %	CP	LOCAL MACH
3.6	0.520050	0.633770
15.5	-0.034666	0.924250
24.0	0.062547	0.873060
29.2	-0.126140	0.973240
37.9	0.006311	0.902590
44.7	-0.021497	0.917260
49.9	-0.054965	0.935030
53.1	-0.168990	0.996560
57.0	-0.269630	1.052400
58.2	-0.223000	1.026400
62.7	-0.252530	1.042800
64.9	-0.442200	1.153000
68.1	-0.454200	1.160300
69.1	-0.505130	1.191700
70.2	-0.561300	1.227300
74.0	-0.505490	1.191900
77.4	-0.625390	1.269200
80.8	-0.717590	1.332800
83.8	-0.666090	1.296800
86.7	-0.771490	1.371900
90.1	-0.805090	1.397200
92.0	-0.761140	1.364300
95.4	-0.681670	1.307600
99.4	-0.429870	1.145600

125209-214D

Table B-11. Tabulated Data for Test 273-15, Condition 1.00.137.004 (Continued)

- ENGINE 4 060 deg INLET RADIAL

COND. 1.00.137.004

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
44.1	0.678920	0.545860	2.7	-0.653200	1.287900
32.2	0.248460	0.776470	6.1	-0.646260	1.283200
23.1	0.651230	0.561600	12.6	-0.777390	1.376200
16.6	0.273070	0.763710	17.0	-0.735330	1.345400
10.2	****	****	26.3	-0.660280	1.292800
4.9	0.325660	0.736400	32.7	-0.712630	1.329200
2.0	0.655810	0.559010	43.2	-0.699070	1.319600
0.0	0.8[illegible]8110	0.443480			

- ENGINE 4 180 deg INLET RADIAL

COND. 1.00.137.004

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
42.5	0.660740	0.556220	6.2	-0.558410	1.225400
31.7	0.475880	0.657470	9.5	-0.604240	1.255200
24.4	0.257240	0.771920	13.2	-0.617680	1.264100
17.8	0.221020	0.790680	17.8	-0.617510	1.264000
11.1	0.075594	0.866230	27.2	-0.313490	1.077300
5.5	0.325490	0.736480	34.5	-0.682240	1.307900
2.4	0.676810	0.547070	45.5	-0.576260	1.236900
0.0	****	****			

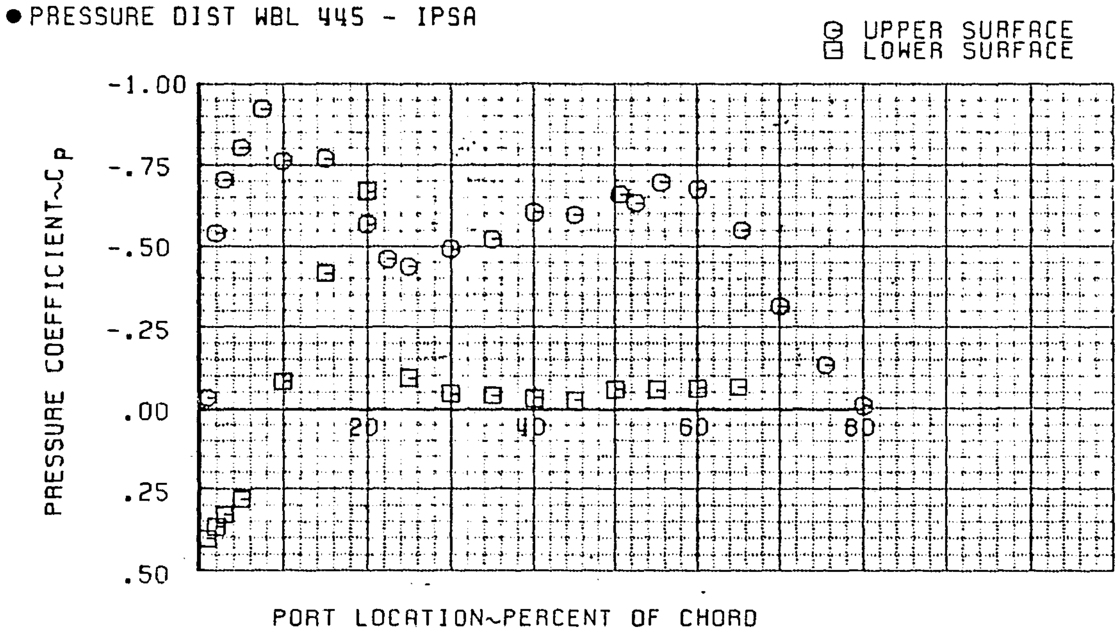
- ENGINE 4 300 deg INLET RADIAL

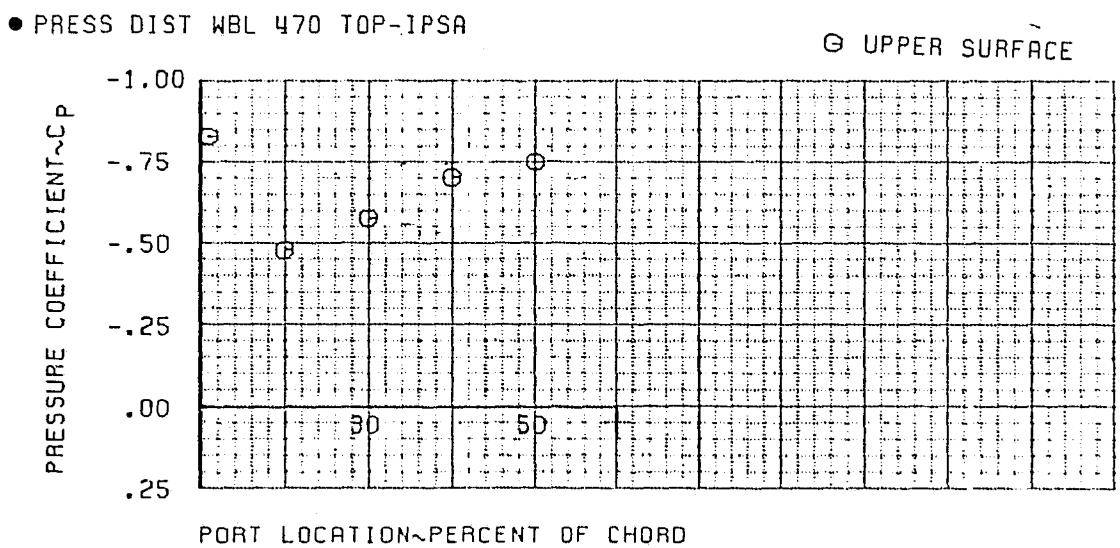
COND. 1.00.137.004

INNER SURFACE X/C - %	CP	LOCAL MACH	OUTER SURFACE X/C - %	CP	LOCAL MACH
42.3	0.655040	0.559450	2.7	-0.516260	1.198600
32.2	0.495340	0.647090	5.8	-0.457880	1.162500
22.7	0.320760	0.738940	12.7	-0.591450	1.246800
16.4	0.213800	0.794430	17.1	-0.604940	1.255600
9.9	0.046549	0.881420	26.4	-0.645850	1.283000
4.7	0.189920	0.806800	33.0	-0.678360	1.305200
2.0	0.622830	0.577510	43.3	-0.617480	1.263900
0.0	0.952510	0.371930			

Table B-11. Tabulated Data for Test 273-15, Condition 1.00.137.004 (Concluded)

125209-215D

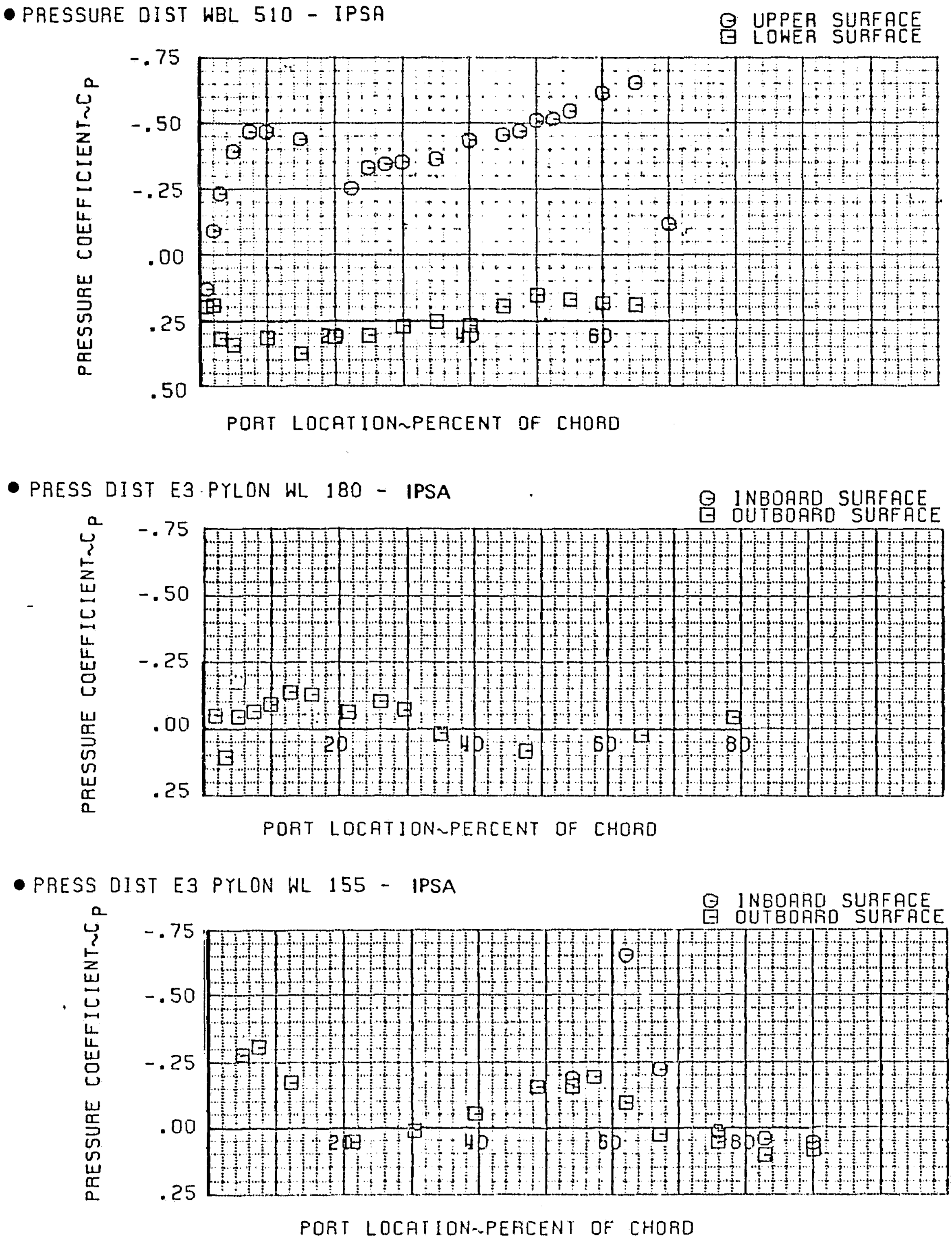




H_P	=	12 270m (40 256 ft)	M	=	0.366
GW	=	206 025 kg (454 207 lbm)	α	=	1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS	=	0 deg
Vc	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP		

125209-130

Figure B-1. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.001)

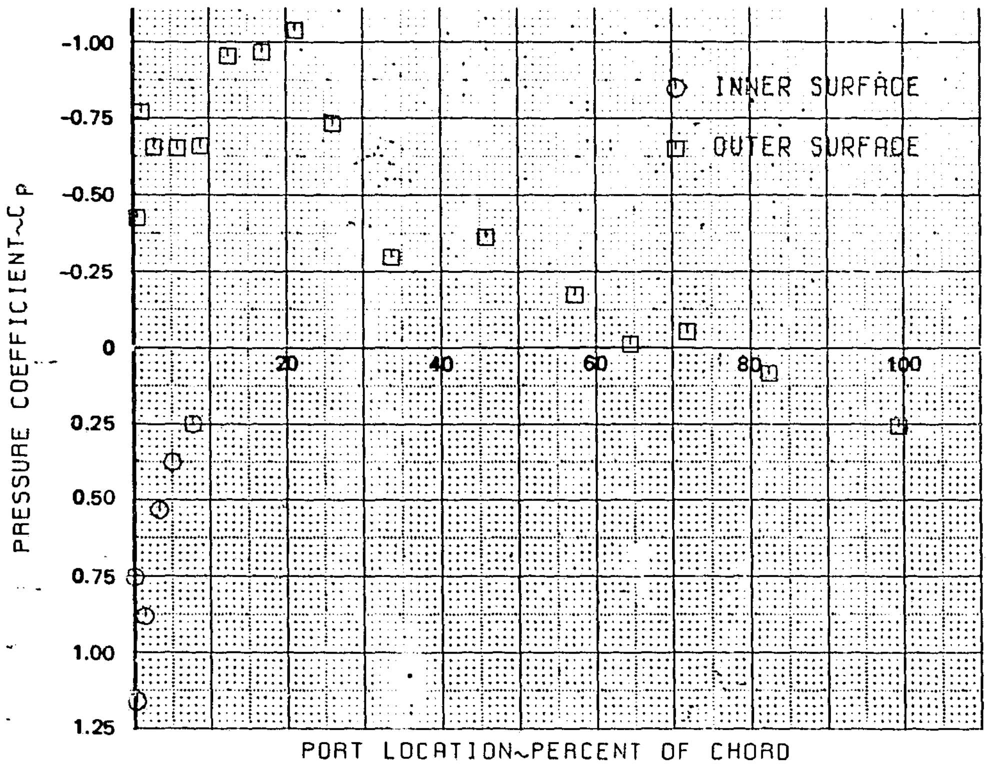


H_p	= 12 270m (40 256 ft)	M	= 0.866
GW	= 206 025 kg (454 207 lbm)	α	= 1.6 deg
Q	= 9.722 kPa (1.410 PSI)	FLAPS = 0 deg	
Vc	= 487.4 km/h (263.2 KTS)	LANDING GEAR UP	

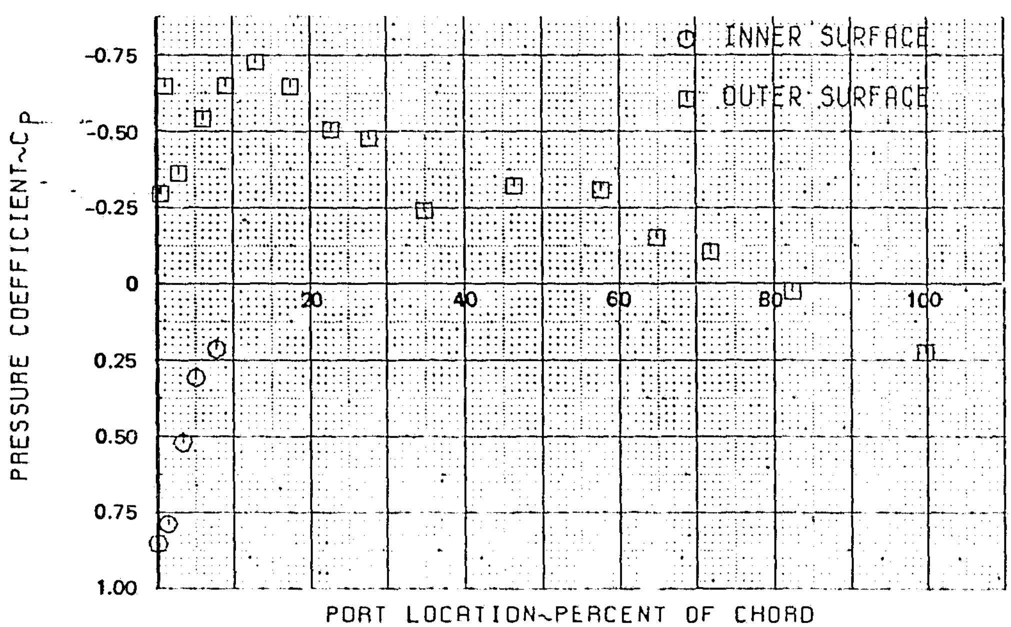
125209-131

Figure B-1. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.001)(Continued)

● ENGINE 3 ~ 030 DEGREE RADIAL —NAIL



● ENGINE 3 ~ 090 DEGREE RADIAL —NAIL

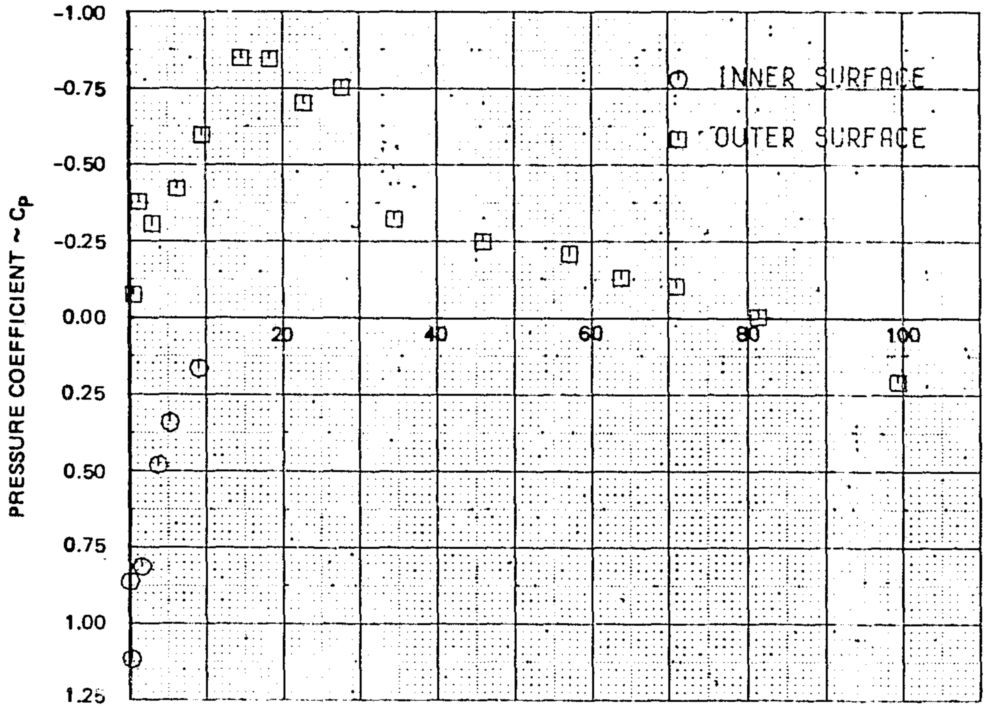


H_p	=	12 270m (40 256 ft)	M	=	0.866
GW	=	206 025 kg (454 207 lbm)	α	=	1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS = 0 deg		
Vc	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP		

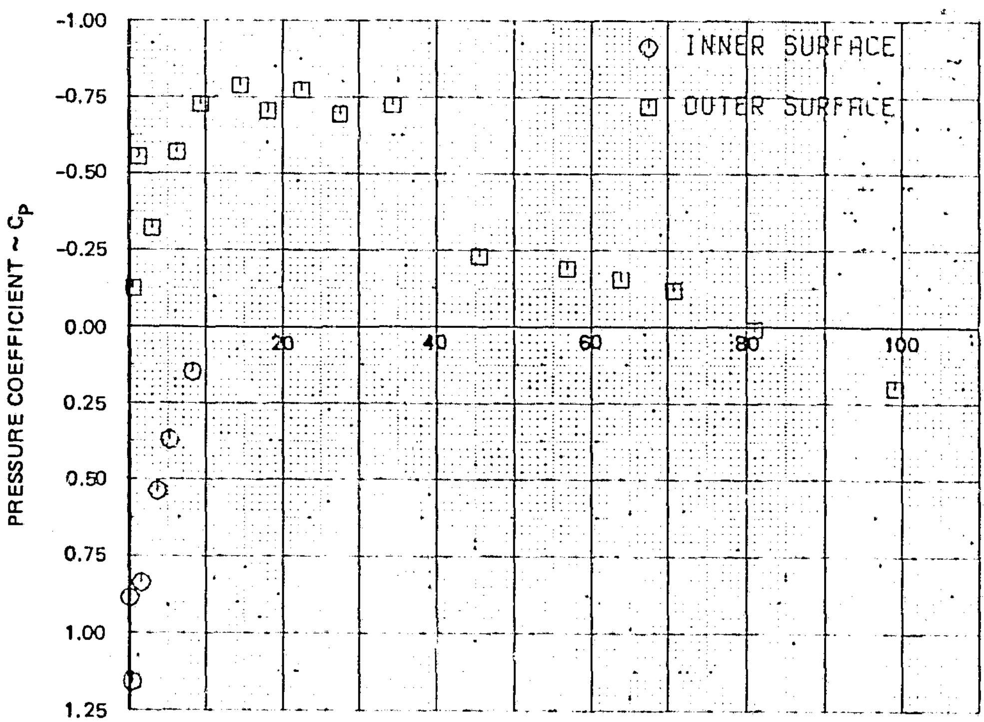
125209-132

Figure B-1. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.001)(Continued)

● ENGINE 3 ~ 150 DEGREE RADIAL–NAIL



● ENGINE 3 ~ 210 DEGREE RADIAL–NAIL

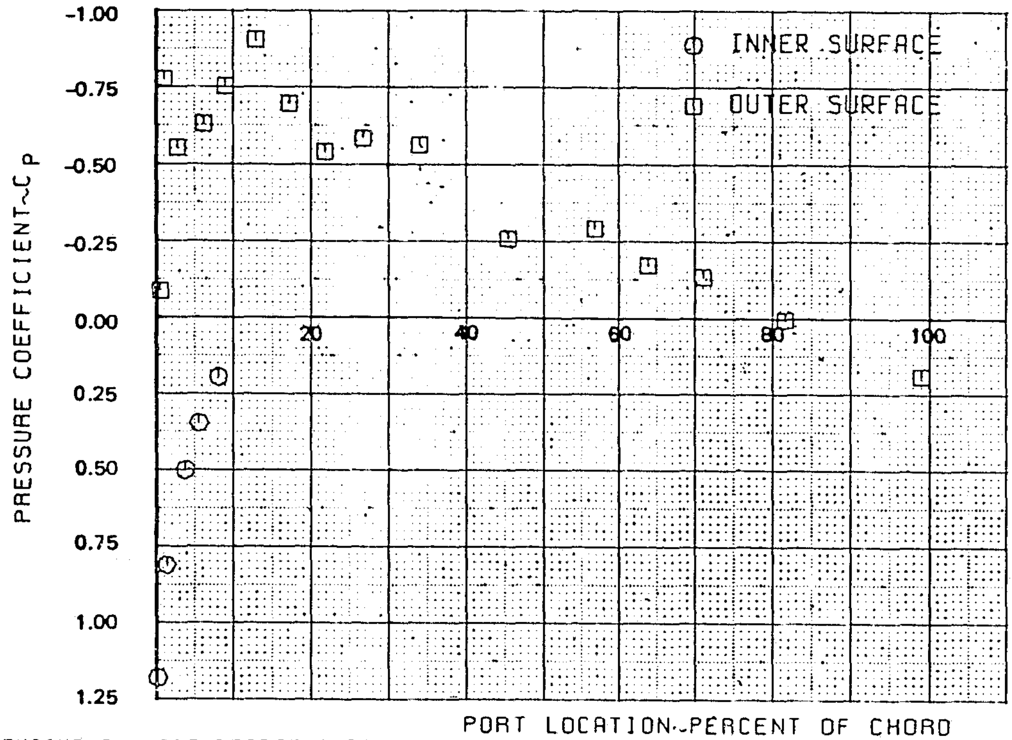


H_p = 12 270m (40 256 ft)		M = 0.866	
GW = 206 025 kg (454 207 lbm)		α = 1.6 deg	
Q = 9.722 kPa (1.410 PSI)		FLAPS = 0 deg	
Vc = 487.4 km/h (263.2 KTS)		LANDING GEAR UP	

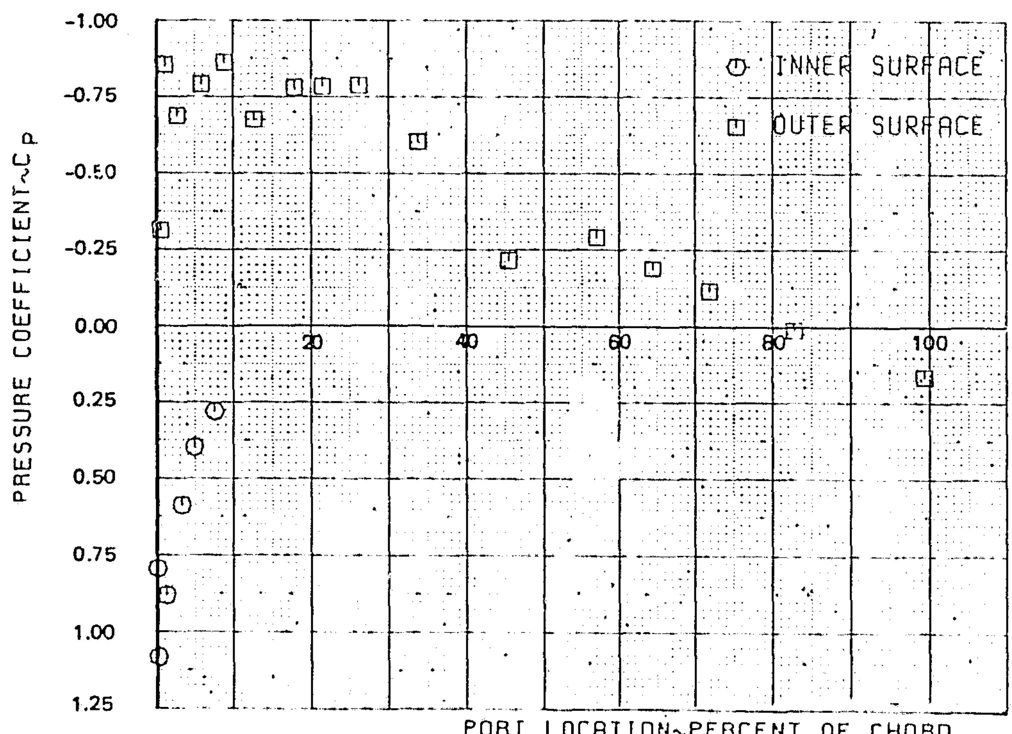
125209-133

Figure B-1. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.001)(Continued)

• ENGINE 3 ~ 270 DEGREE RADIAL–NAIL



• ENGINE 3 ~ 330 DEGREE RADIAL–NAIL

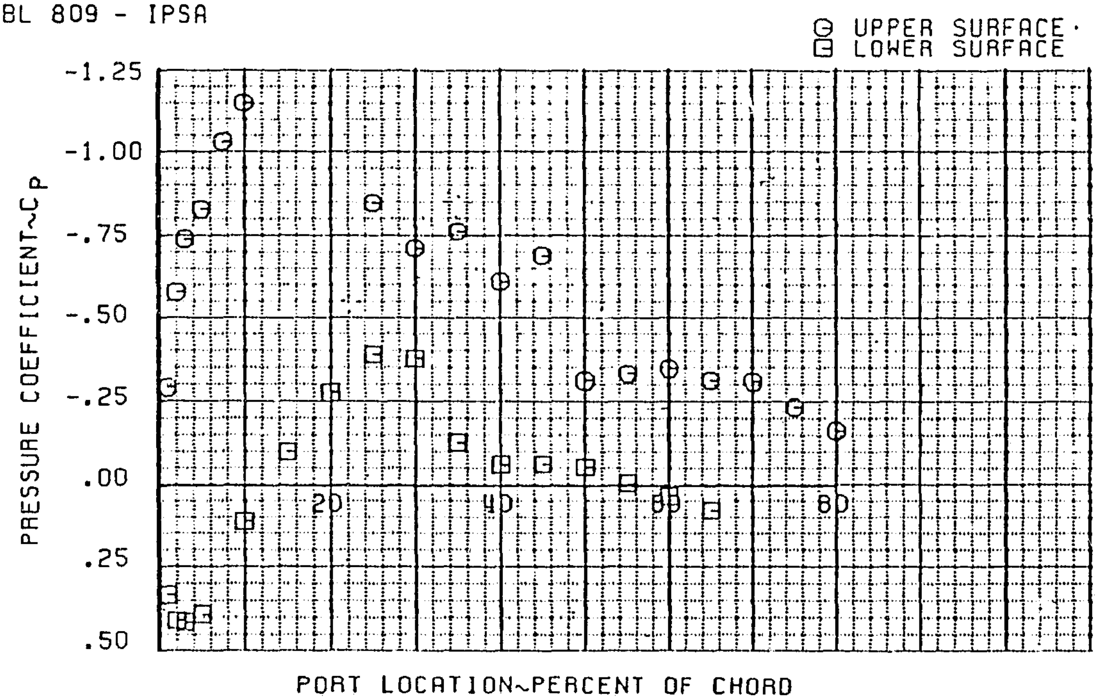


H_p	=	12 270m (40 256 ft)	M	=	0.866
GW	=	206 025 kg (454 207 lbm)	α	=	1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS	=	0 deg
Vc	=	487.4 km/h (263 2 KTS)	LANDING GEAR UP		

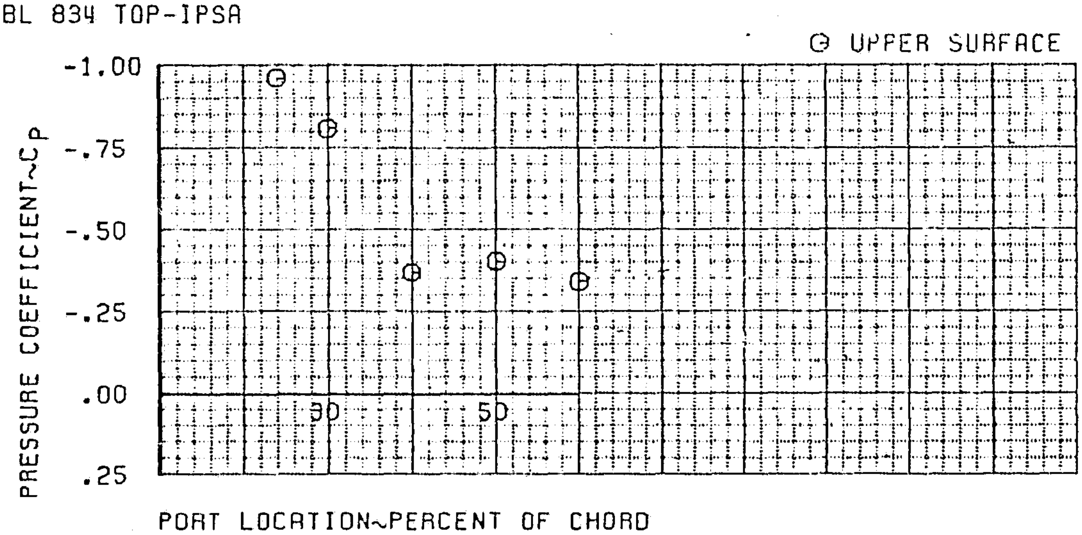
125209-134

Figure B-1. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.001)(Continued)

• WBL 809 - IPSA



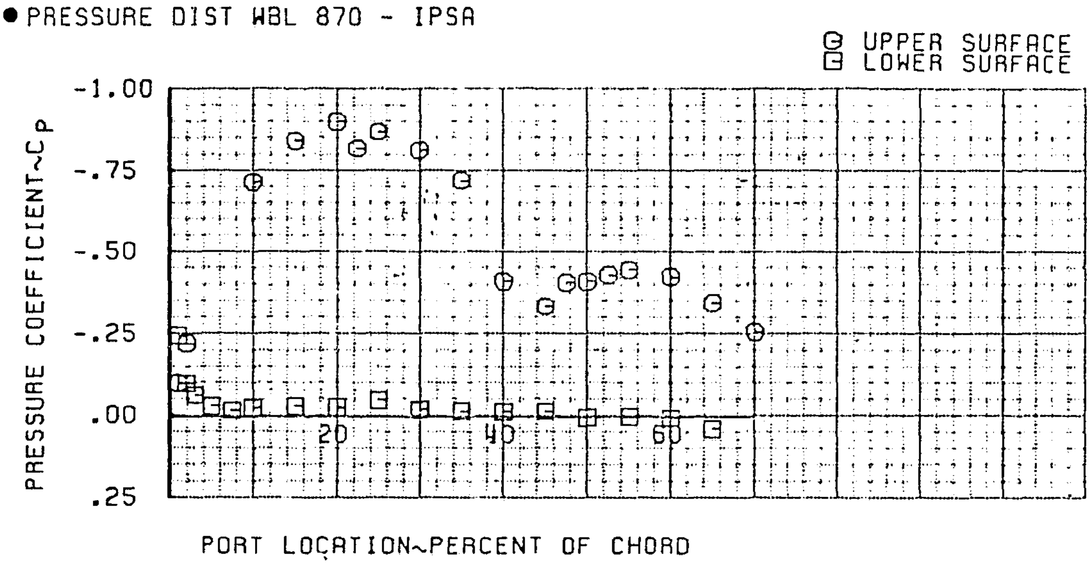
• WBL 834 TOP-IPSA

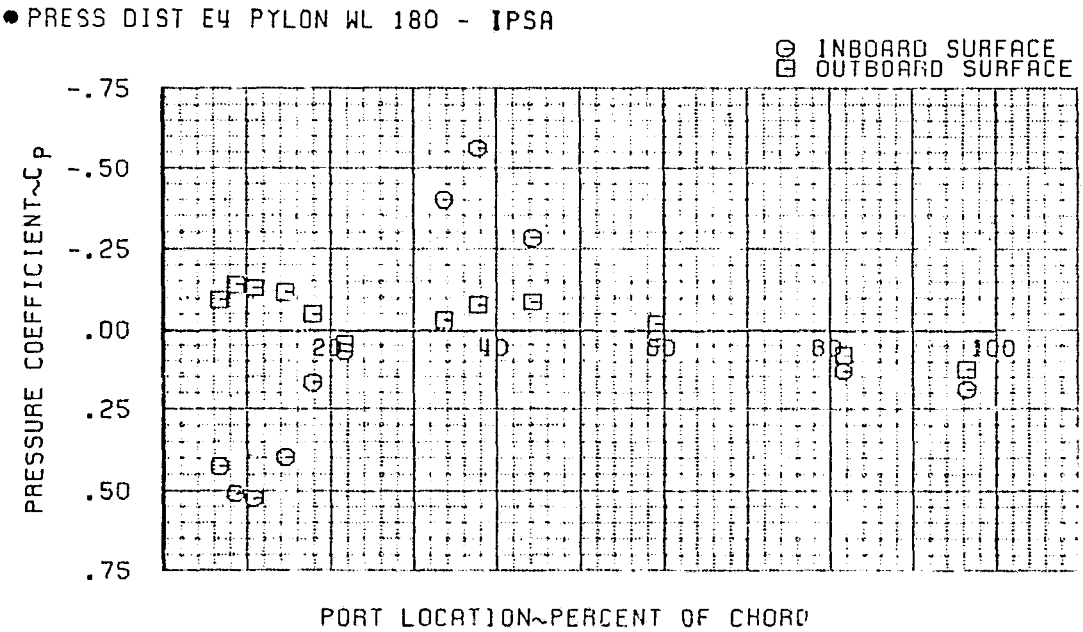


H_p	=	12 270m (40 256 ft)	M	=	0.866
GW	=	206 025 kg (454 207 lbm)	α	=	1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS = 0 deg		
Vc	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP		

125209-135

Figure B-1. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.001)(Continued)



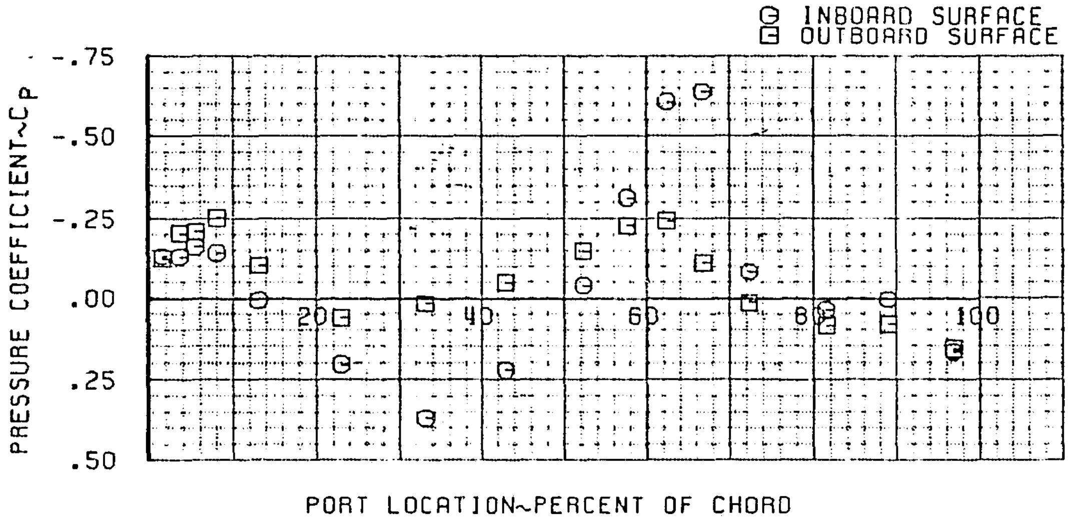


H_p	=	12 270m (40 256 ft)	M	=	0.866
GW	=	206 025 kg (454 207 lbm)	α	=	1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS = 0 deg		
Vc	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP		

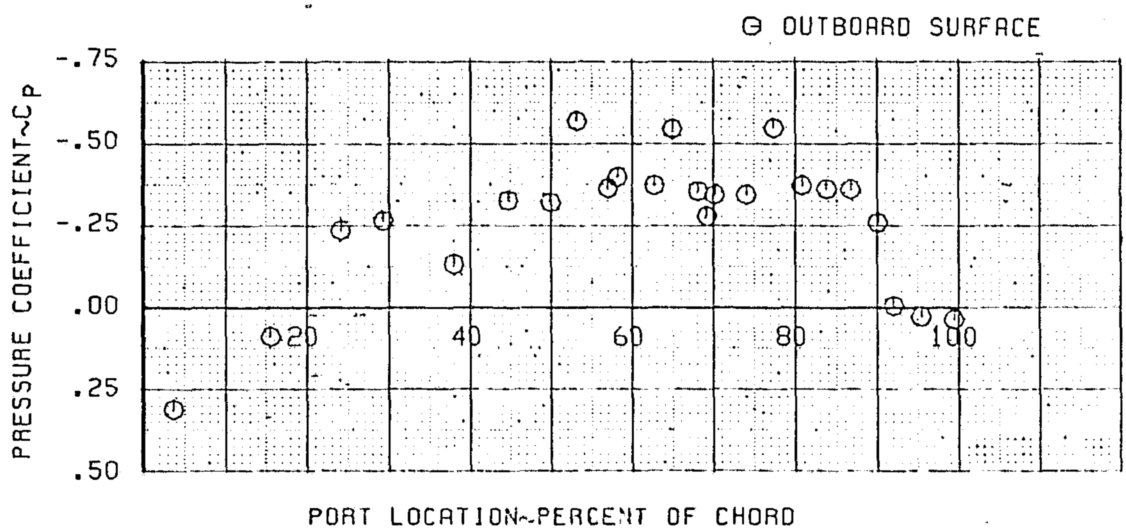
125209-136

Figure B-1. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.001)(Continued)

● ENGINE 4 PYLON WL 155 – IPSA



● ENGINE 4 CORE 030 DEG – IPSA

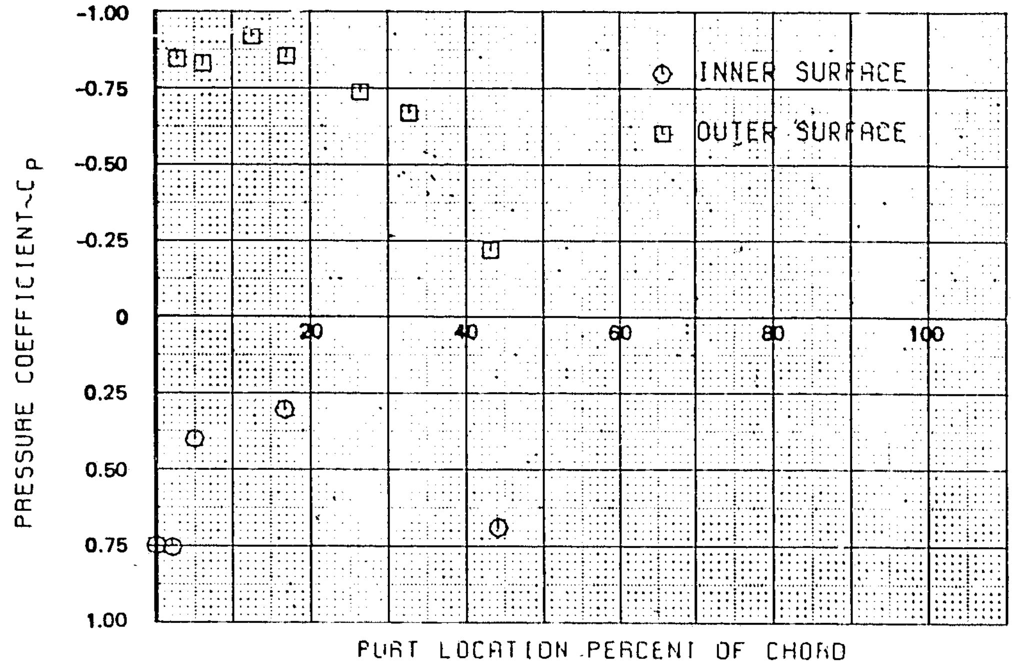


H_p = 12 270m (40 256 ft)		M = 0.866	
GW = 206 025 kg (454 207 lbm)		α = 1.6 deg	
Q = 9.722 kPa (1.410 PSI)		FLAPS = 0 deg	
Vc = 487.4 km/h (263.2 KTS)		LANDING GEAR UP	

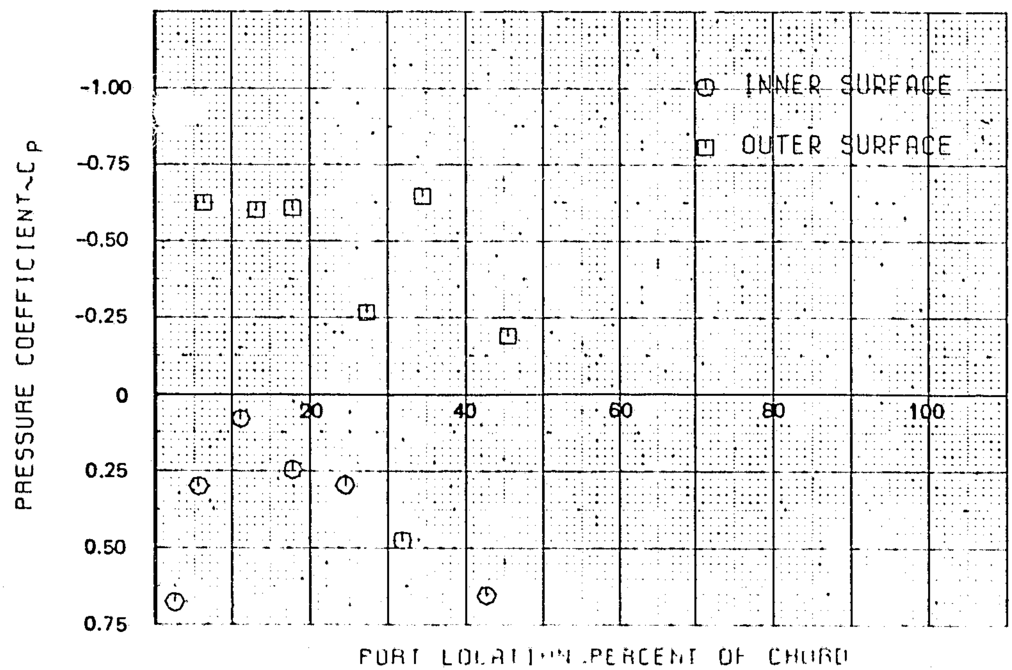
125209-137

Figure B-1. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.001)(Continued)

• ENGINE 4 ~ 060 DEGREE RADIAL —NAIL



• ENGINE 4 ~ 180 DEGREE RADIAL —NAIL

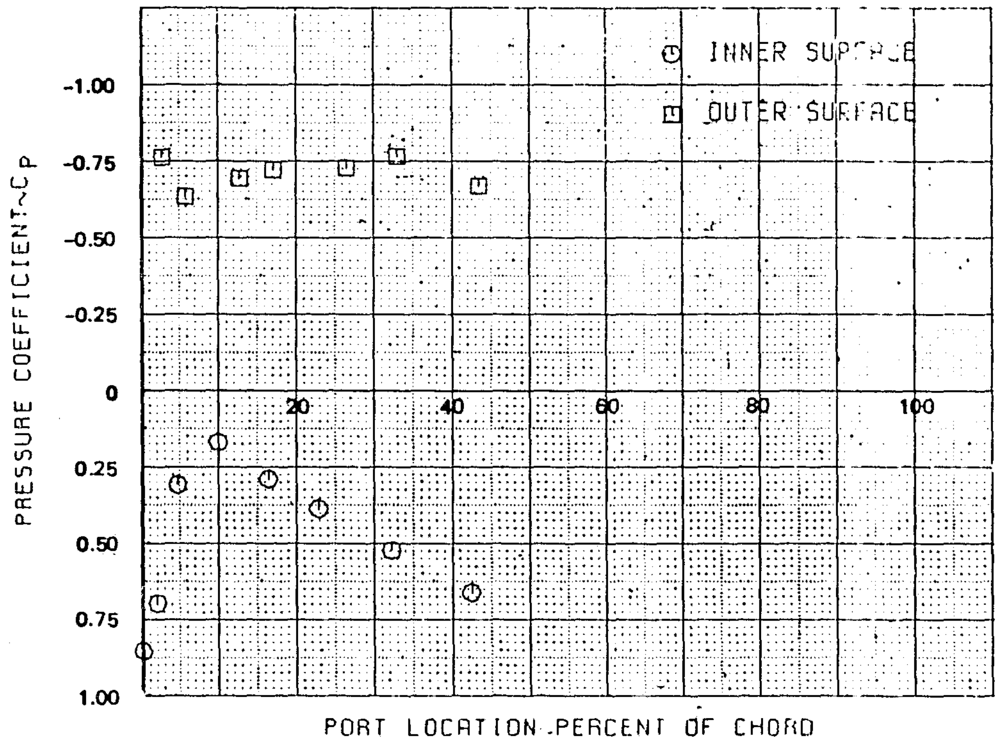


H_P	=	12 270m (40 256 ft)	M	=	0.866
GW	=	206 025 kg (454 207 lbm)	α	=	1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS = 0 deg		
Vc	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP		

125209-138

Figure B-1. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.001)(Continued)

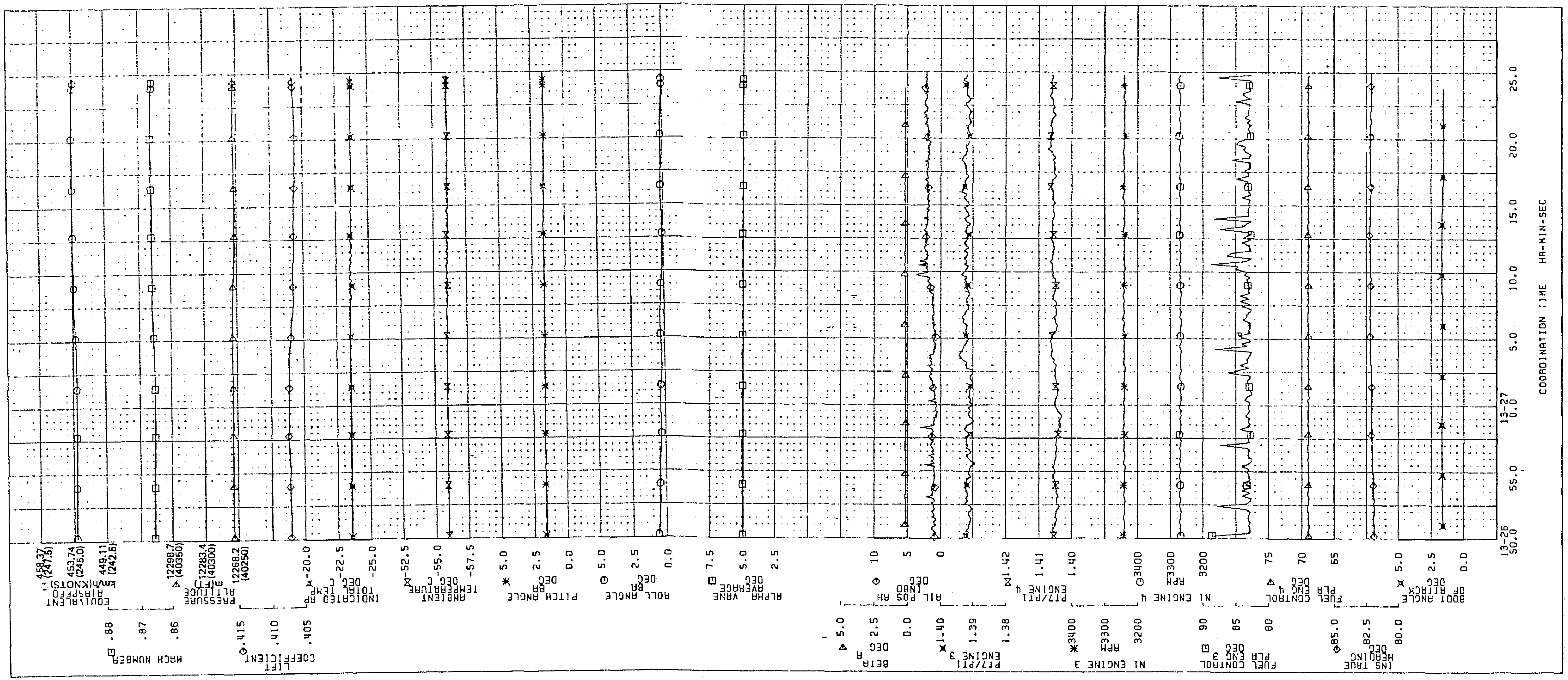
● ENGINE 4 ~ 300 DEGREE RADIAL —NAIL



H_p	=	12 270m (40 256 ft)	M	=	0.866
GW	=	206 025 kg (454 207 lbm)	α	=	1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS = 0 deg		
Vc	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP		

125209-139

Figure B-1. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.001)(Continued)

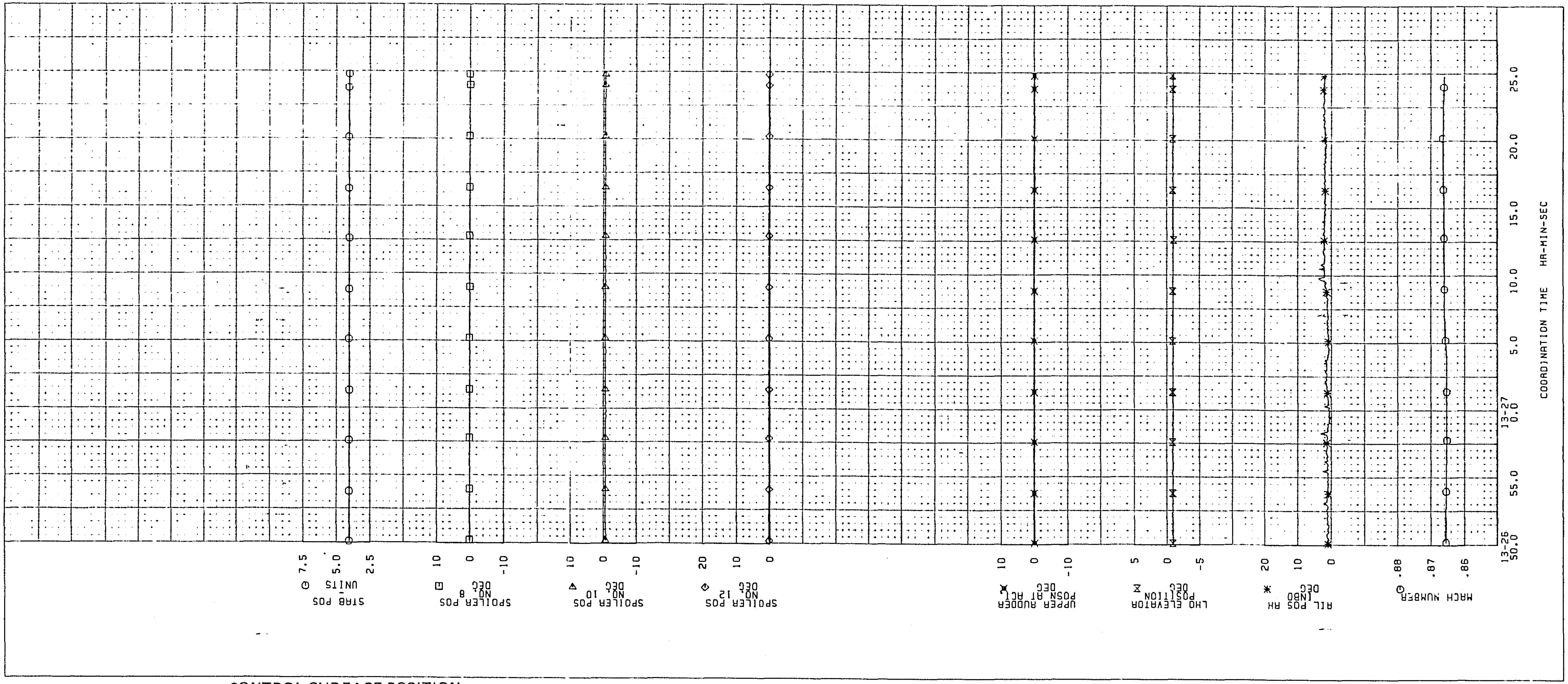


• CONDITION STABILITY

Hp	=	12 270m (40 256 ft)	M	= 0.866
GW	=	206 025 kg (454 207 lbm)	α	= 1.6 deg
Q	=	9,722 kPa (1.410 PSI)	FLAPS = 0 deg	
Vc	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP	

125209-140

Figure B-1. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.001) (Continued)

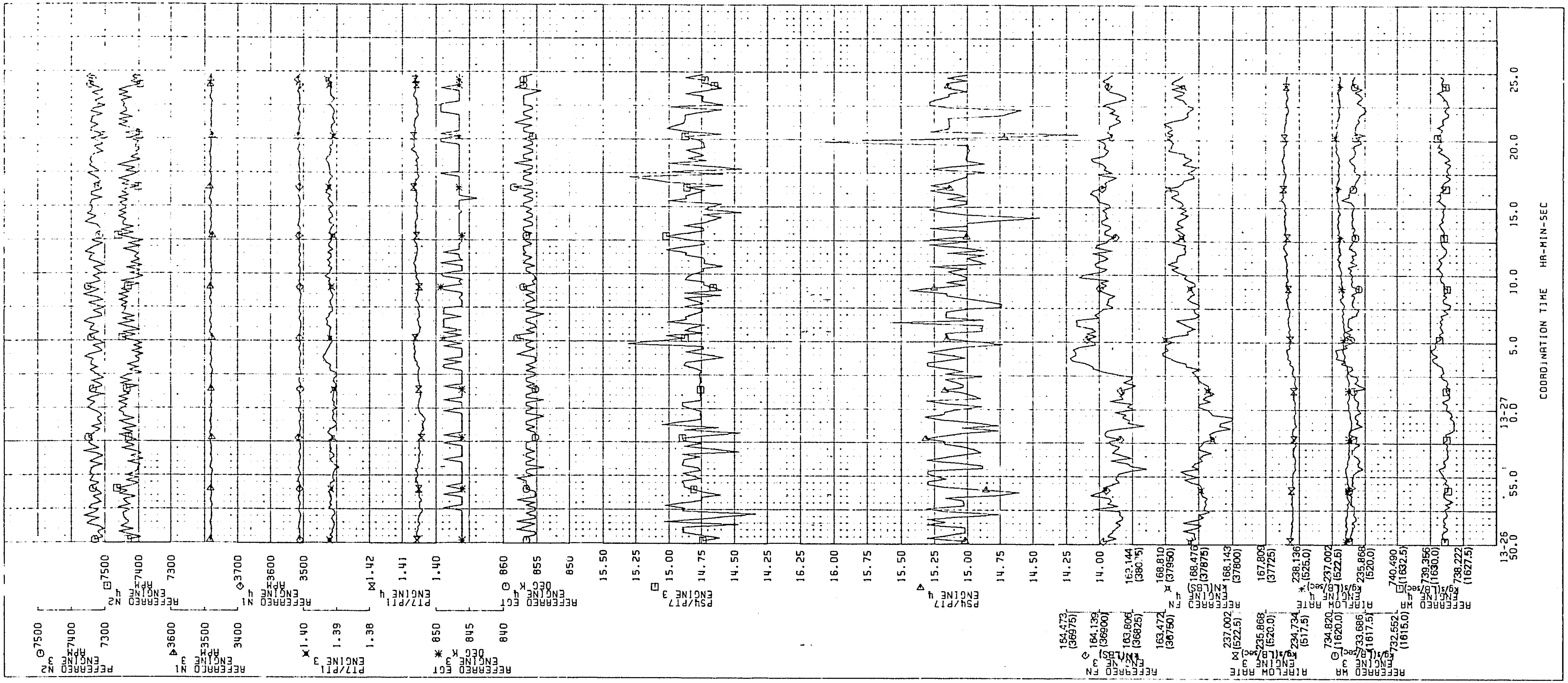


• CONTROL SURFACE POSITION

Hp	=	12 270m (40 256 ft)	M	=	0.866
GW	=	206 025 kg (454 207 lbm)	α	=	1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS	=	0 deg
Vc	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP		

126209-141

Figure B-1. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.001)(Continued)



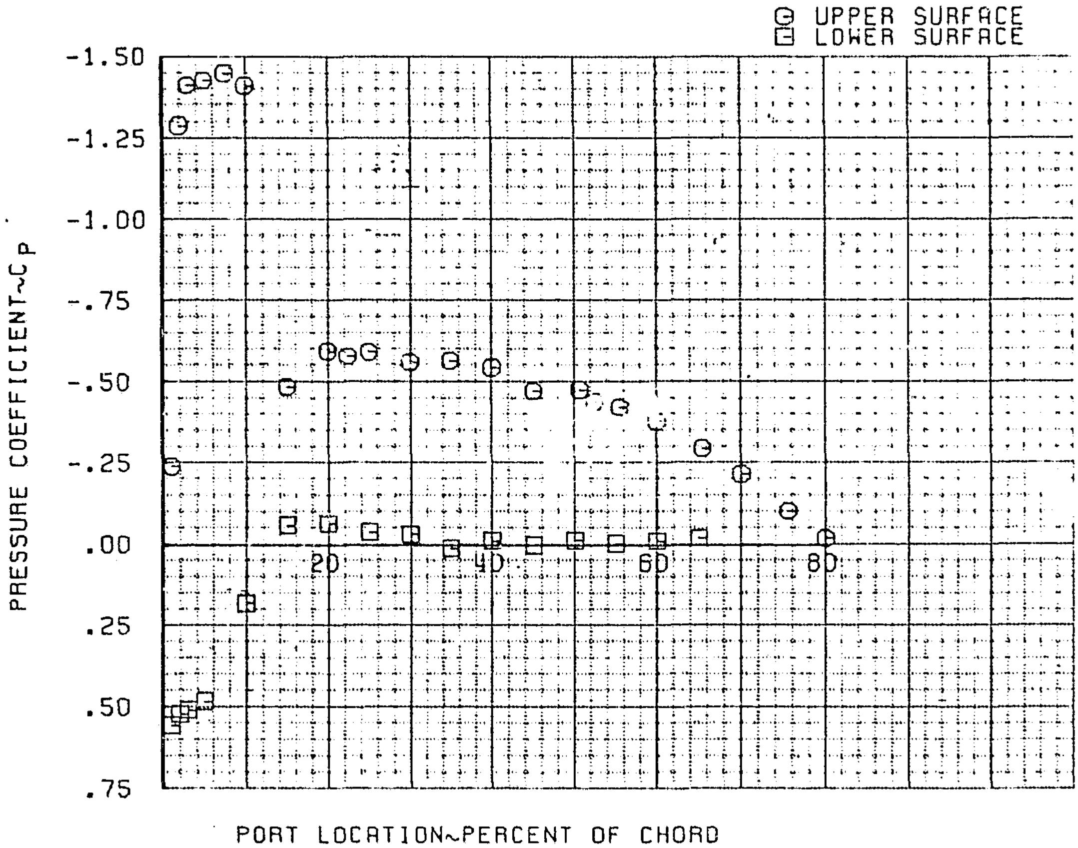
• ENGINE AIRFLOW

Hp	=	12 270m (40 256 ft)	M	= 0.866
GW	=	206 025 kg (454 207 lbm)	α	= 1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS = 0 deg	
Vc	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP	

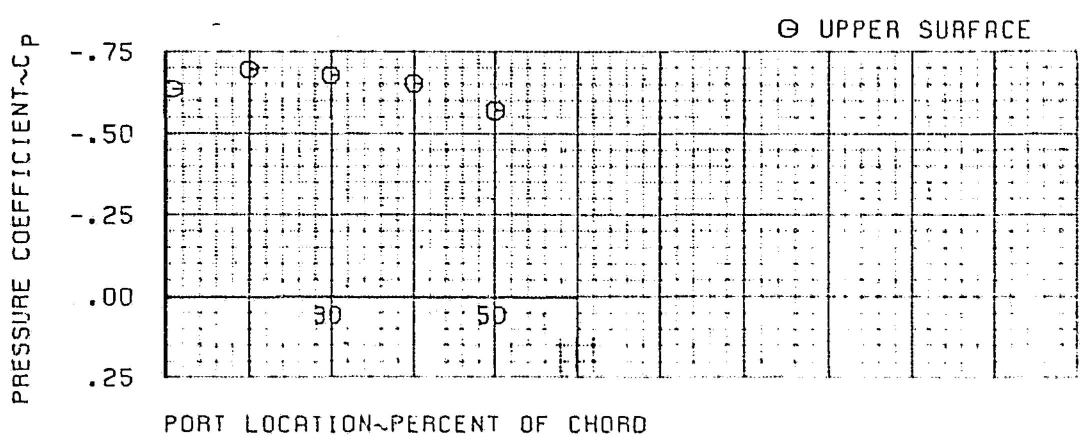
125209-142

Figure B-1. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.001) (Concluded)

• WBL 445 - IPSA



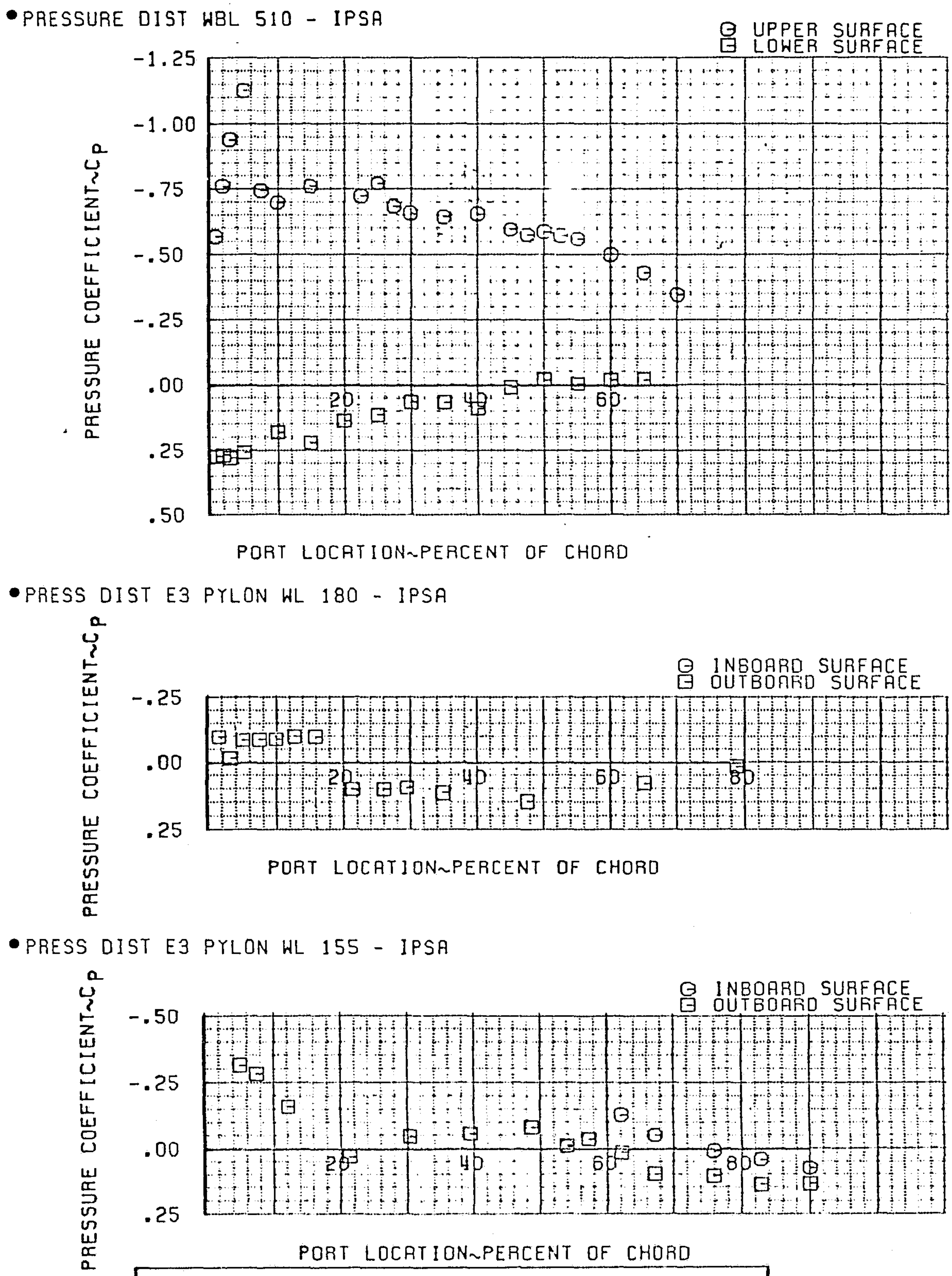
• WBL 470 TOP-IPSA



H_p	= 12 478m (40 938 ft)	M	= 0.767
GW	= 199 759 kg (440 393 lbm)	α	= 3.3 deg
Q	= 7.384 kPa (1.071 PSI)	FLAPS = 0 deg	
Vc	= 418.7 km/h (226.1 KTS)	LANDING GEAR UP	

Figure B-2. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.002.1)

125209-143

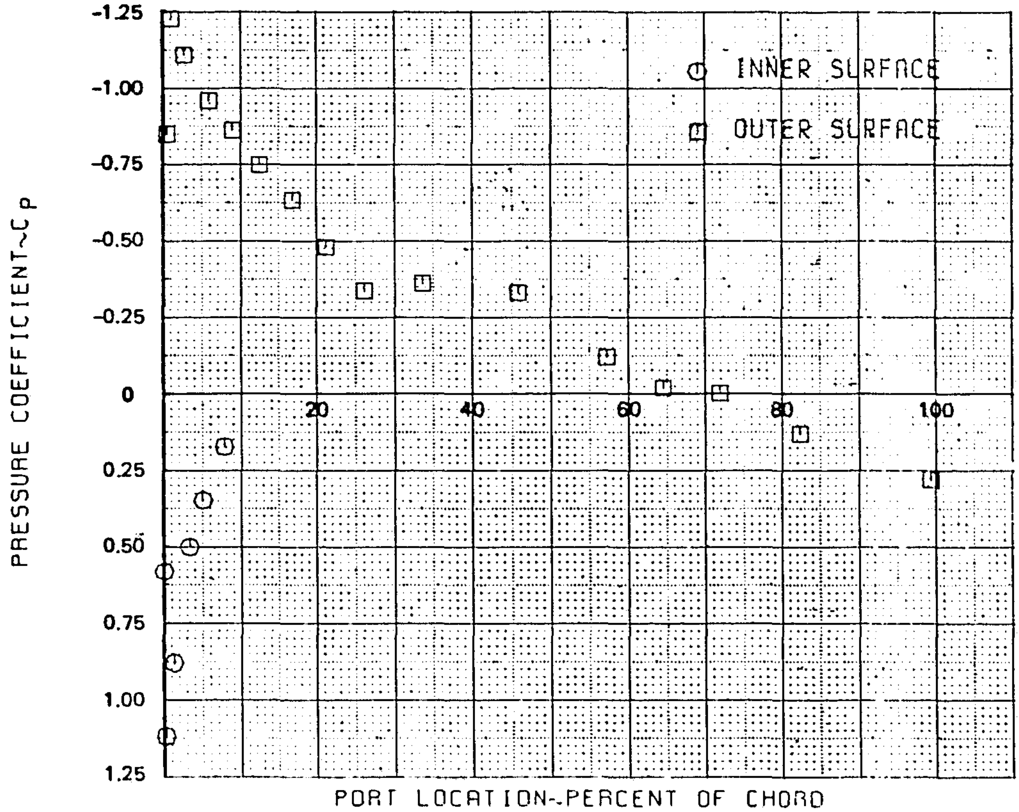


H_P	= 12 478m (40 938 ft)	M	= 0.767
GW	= 199 759 kg (440 393 lbm)	α	= 3.3 deg
Q	= 7.384 kPa (1.071 PSI)	FLAPS = 0 deg	
Vc	= 418.7 km/h (226.1 KTS)	LANDING GEAR UP	

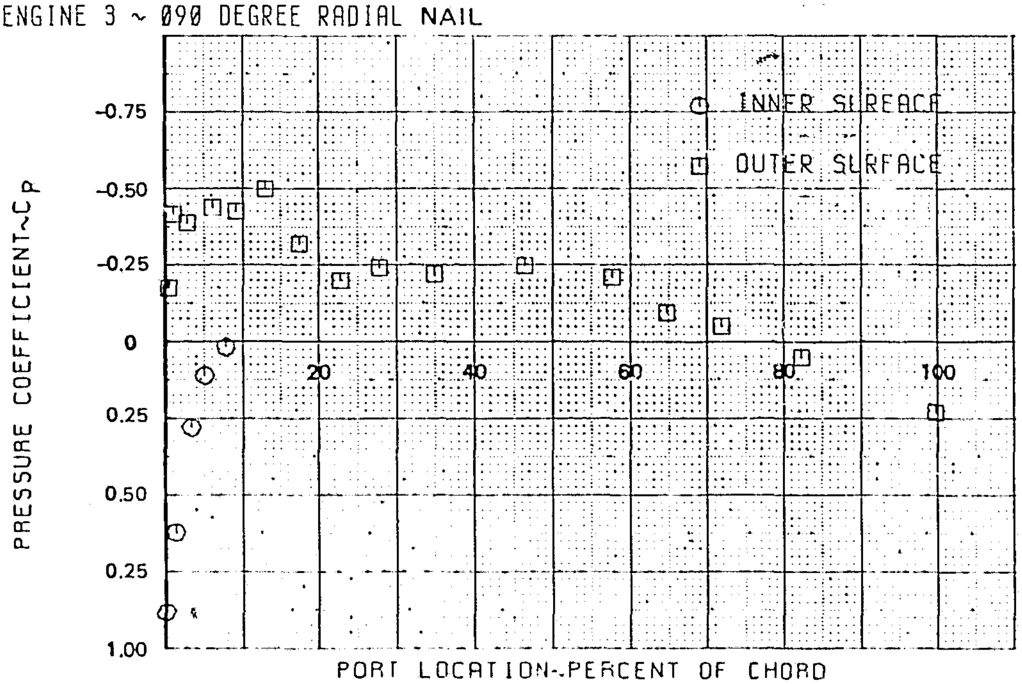
125209-144

Figure B-2. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

•ENGINE 3 ~ 030 DEGREE RADIAL NAIL



•ENGINE 3 ~ 090 DEGREE RADIAL NAIL

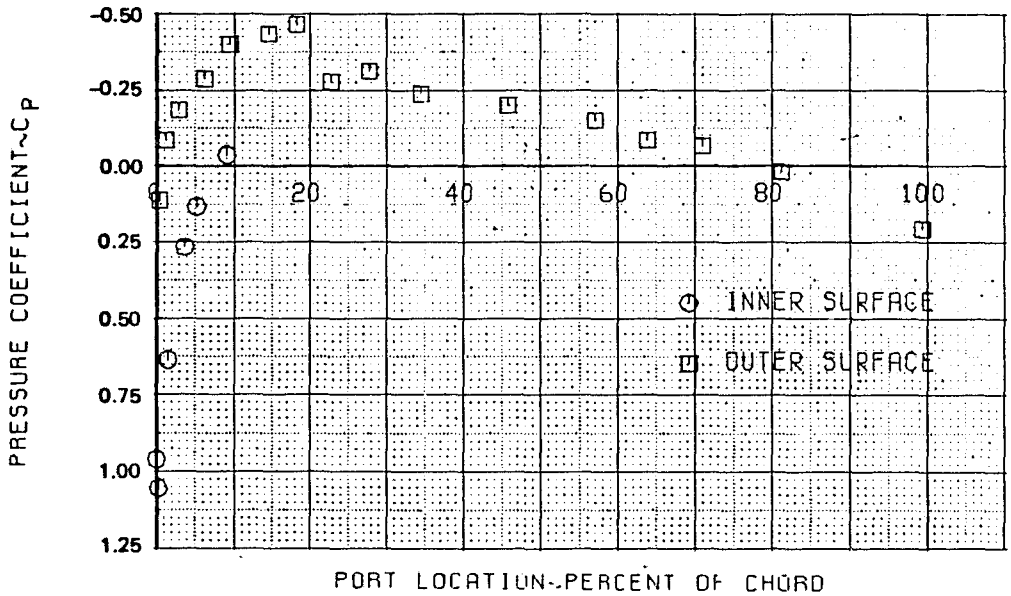


H_p	=	12 478m (40 938 ft)	M	=	0.767
GW	=	199 759 kg (440 393 lbm)	α	=	3.3 deg
Q	=	7.384 kPa (1.071 PSI)	FLAPS = 0 deg		
Vc	=	418.7 km/h (226.1 KTS)	LANDING GEAR UP		

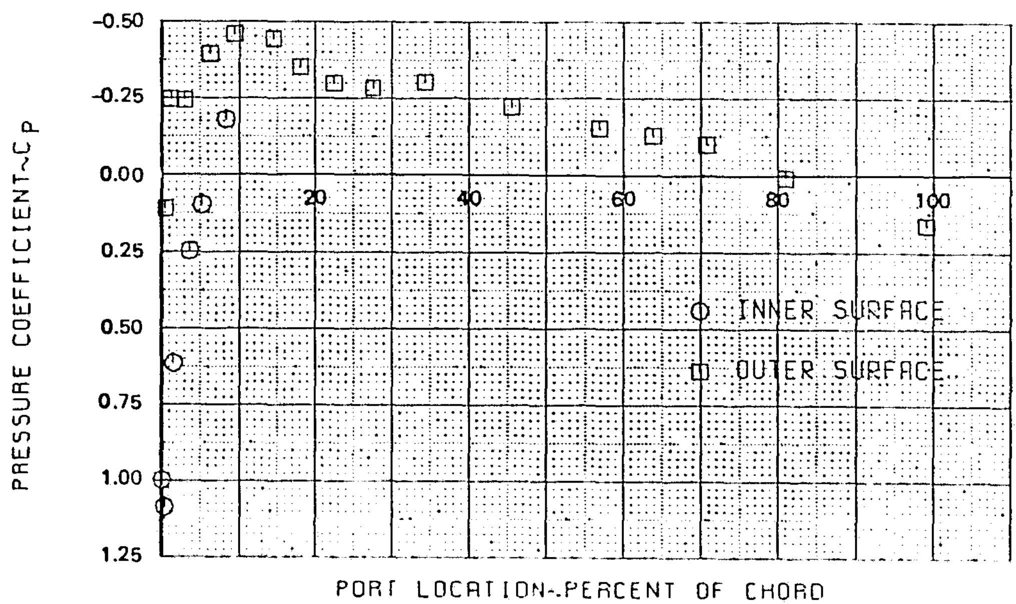
125209-145

Figure B-2. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

• ENGINE 3 ~ 150 DEGREE RADIAL —NAIL



• ENGINE 3 ~ 210 DEGREE RADIAL —NAIL

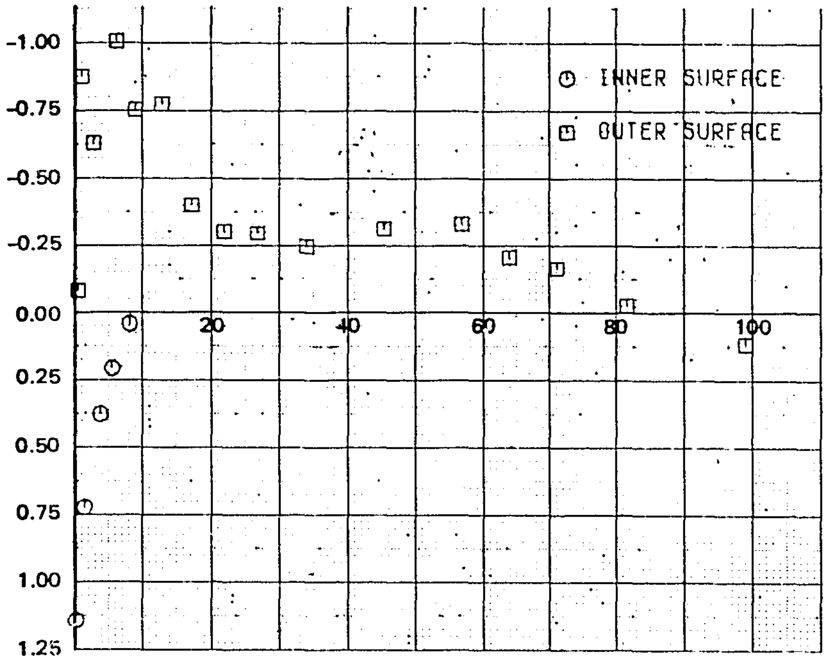


H_P	=	12 478m (40 938 ft)	M	=	0.767
GW	=	199 759 kg (440 393 lbm)	α	=	3.3 deg
Q	=	7.384 kPa (1.071 PSI)	FLAPS = 0 deg		
Vc	=	418.7 km/h (226.1 KTS)	LANDING GEAR UP		

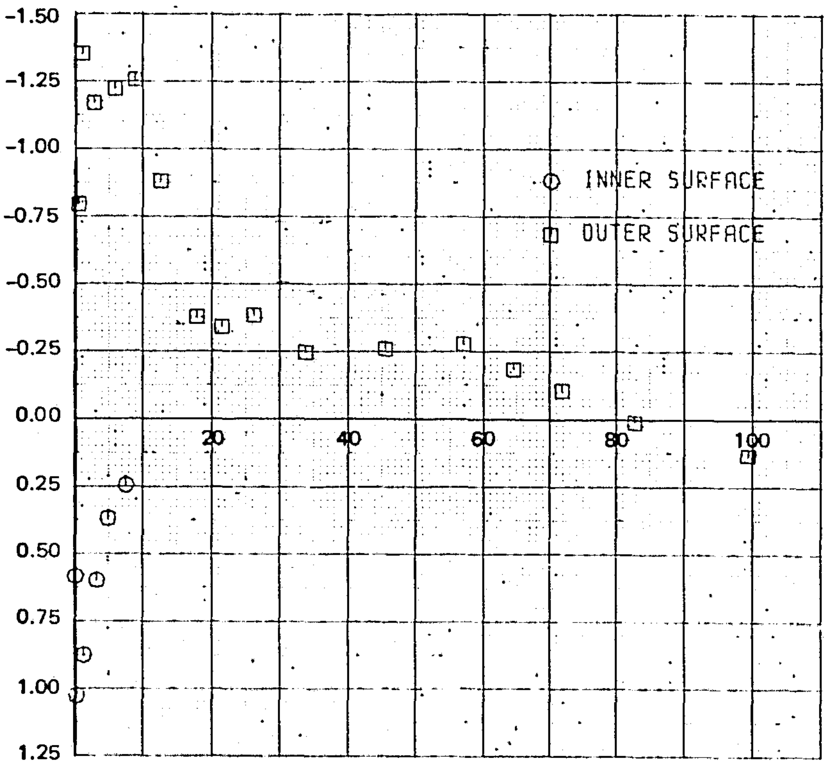
Figure B-2. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

125209-146

●ENGINE 3 ~ 270 DEGREE RADIAL —NAIL



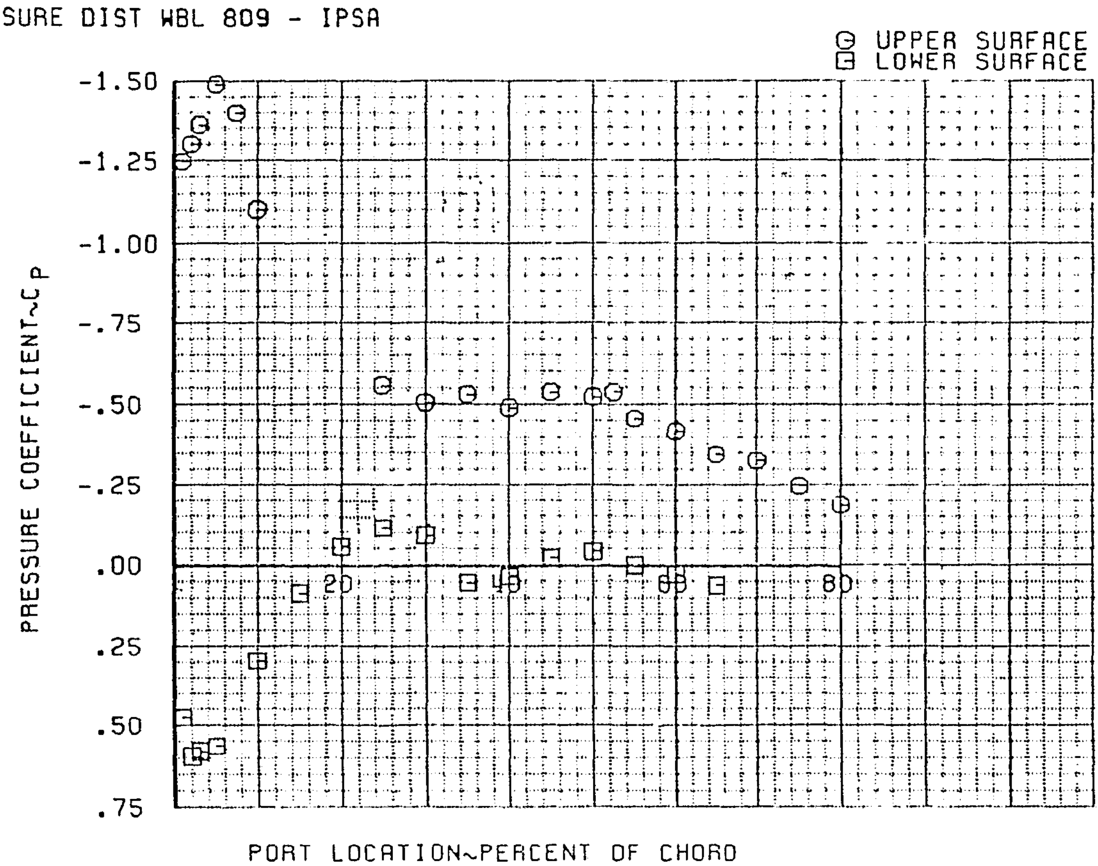
●ENGINE 3 ~ 330 DEGREE RADIAL —NAIL

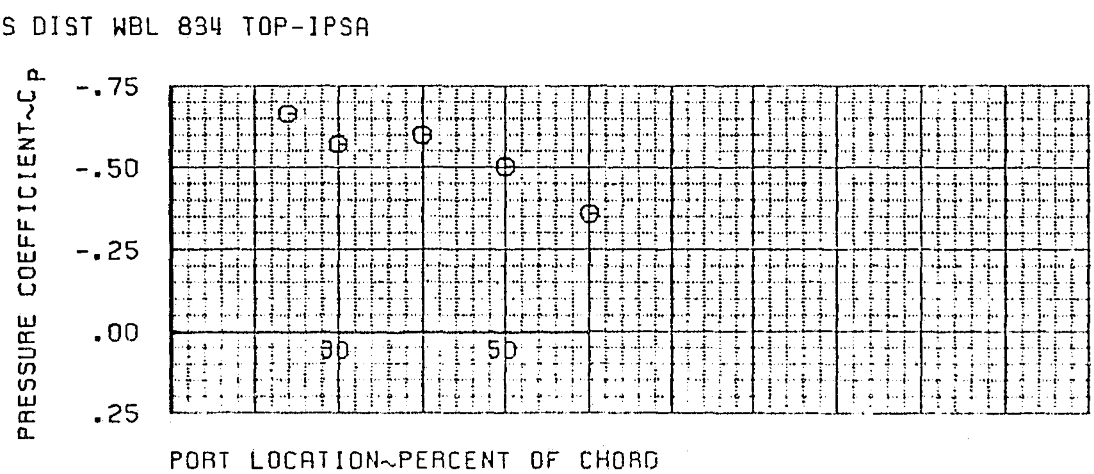


H_p	=	12 478m (40 938 ft)	M	=	0.767
GW	=	199 759 kg (440 393 lbm)	α	=	3.3 deg
Q	=	7.384 kPa (1.071 PSI)	FLAPS = 0 deg		
Vc	=	418.7 km/h (226.1 KTS)	LANDING GEAR UP		

125209-147

Figure B-2. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

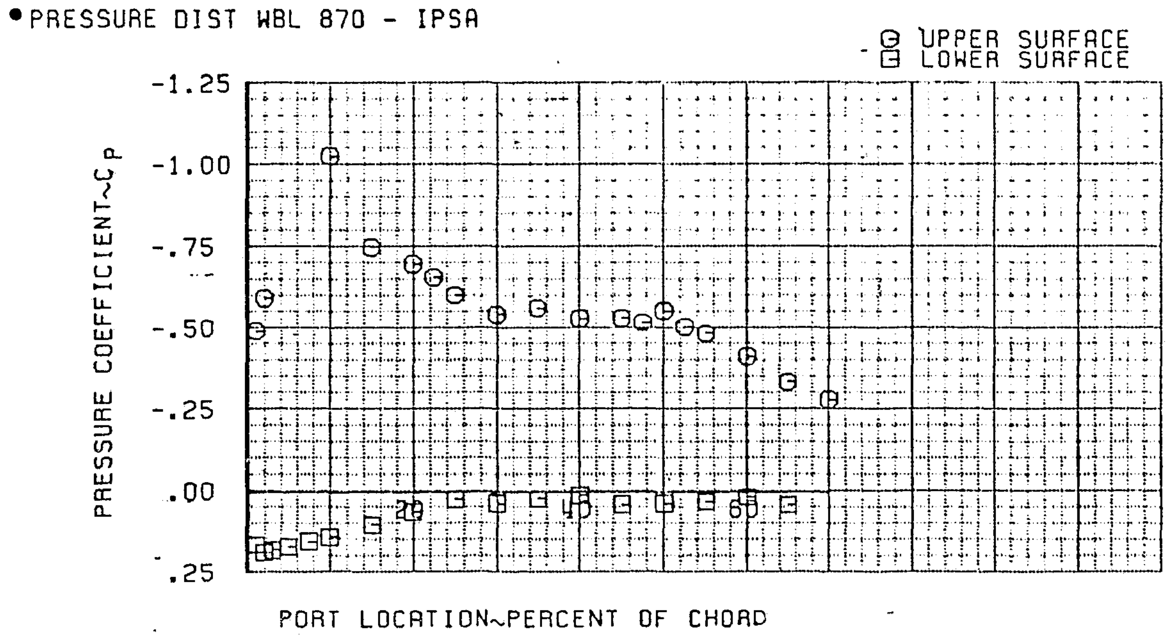


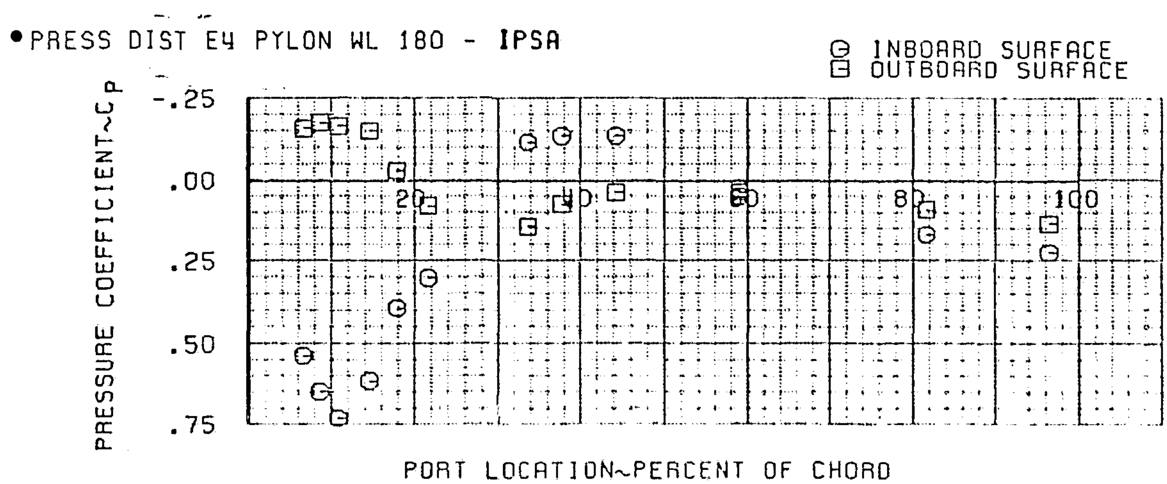


H_p	= 12 478m (40 938 ft)	M	= 0.767
GW	= 199 759 kg (440 393 lbm)	α	= 3.3 deg
Q	= 7.384 kPa (1.071 PSI)	FLAPS = 0 deg	
Vc	= 418.7 km/h (226.1 KTS)	LANDING GEAR UP	

125209-148

Figure B-2. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)



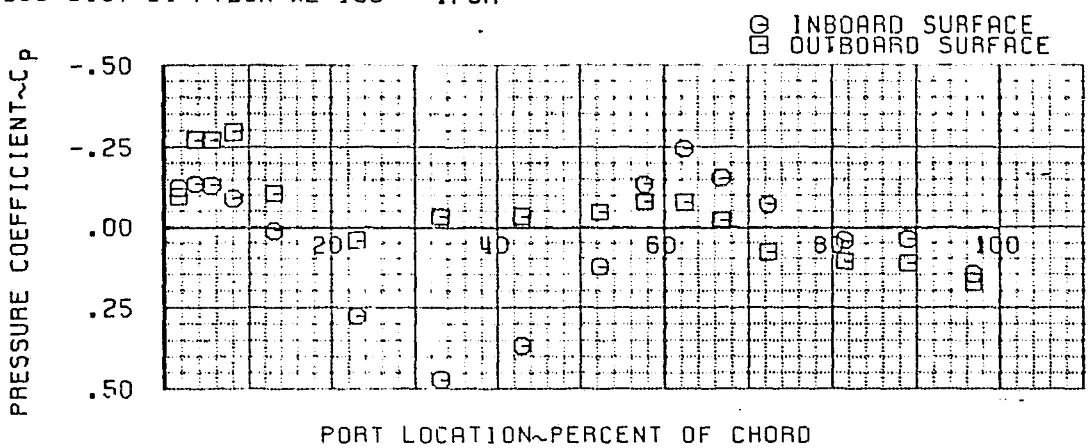


H_P	= 12 478m (40 938 ft)	M	=	0.767
GW	= 199 759 kg (440 393 lbm)	α	=	3.3 deg
Q	= 7.384 kPa (1.071 PSI)	FLAPS = 0 deg		
Vc	= 418.7 km/h (226.1 KTS)	LANDING GEAR UP		

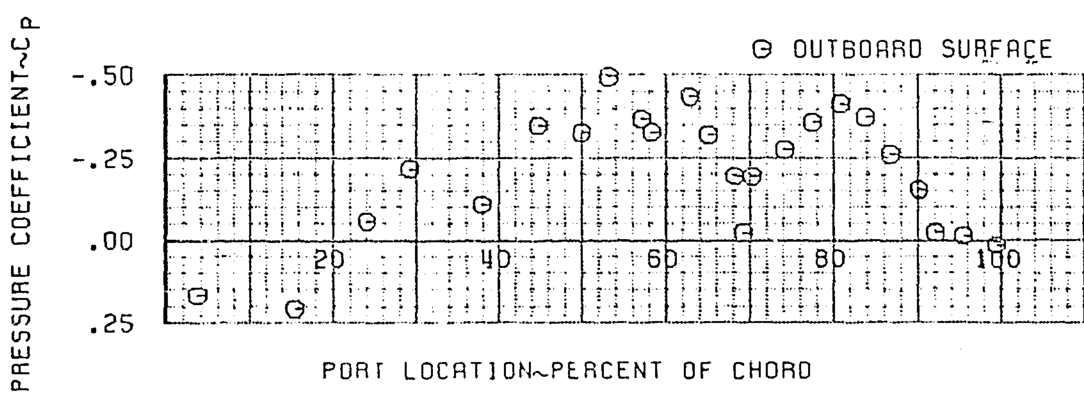
125209-149

Figure B-2. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

• PRESS DIST E4 PYLON WL 155 - IPSA



• PRESSURE DIST E4 CORE 030 DEG - IPSA

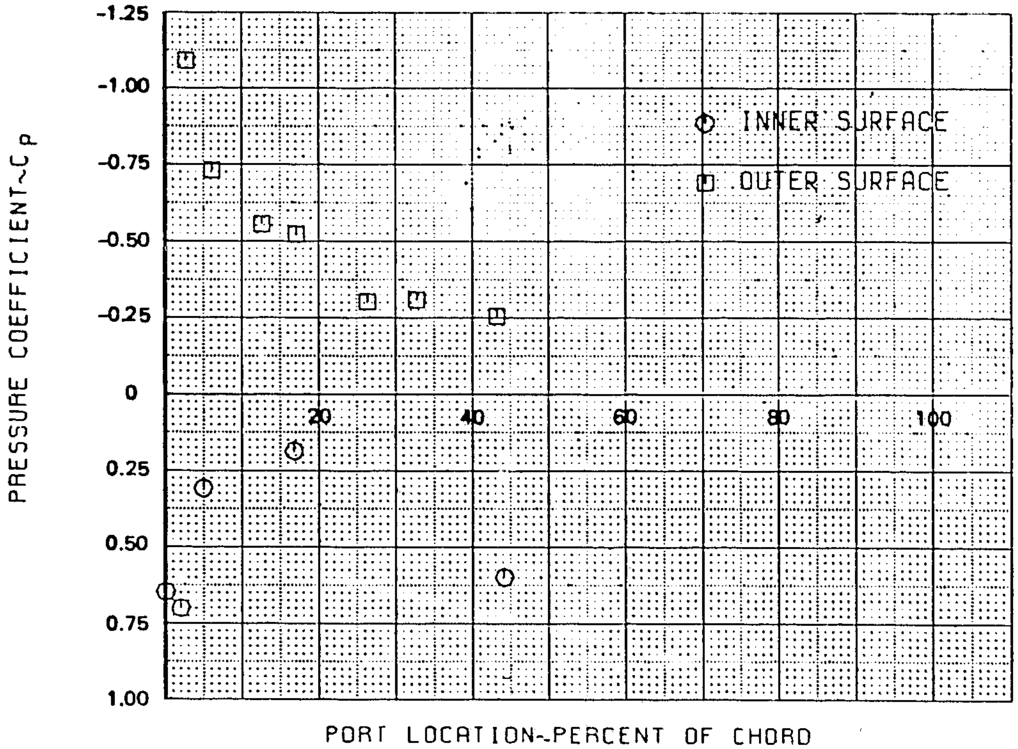


H_P	= 12 478m (40 938 ft)	M	= 0.767
GW	= 199 759 kg (440 393 lbm)	α	= 3.3 deg
Q	= 7.384 kPa (1.071 PSI)	FLAPS = 0 deg	
Vc	= 418.7 km/h (226.1 KTS)	LANDING GEAR UP	

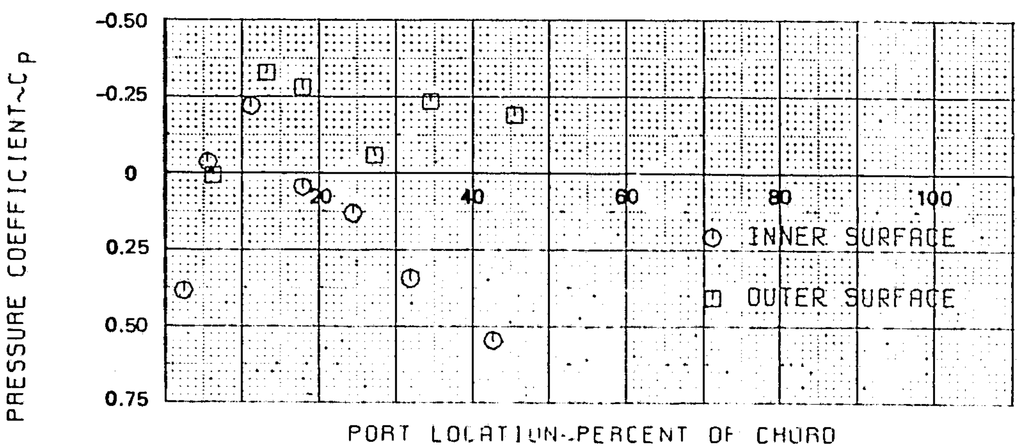
125209-150

Figure B-2. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

• ENGINE 4 ~ 060 DEGREE RADIAL –NAIL



• ENGINE 4 ~ 180 DEGREE RADIAL –NAIL

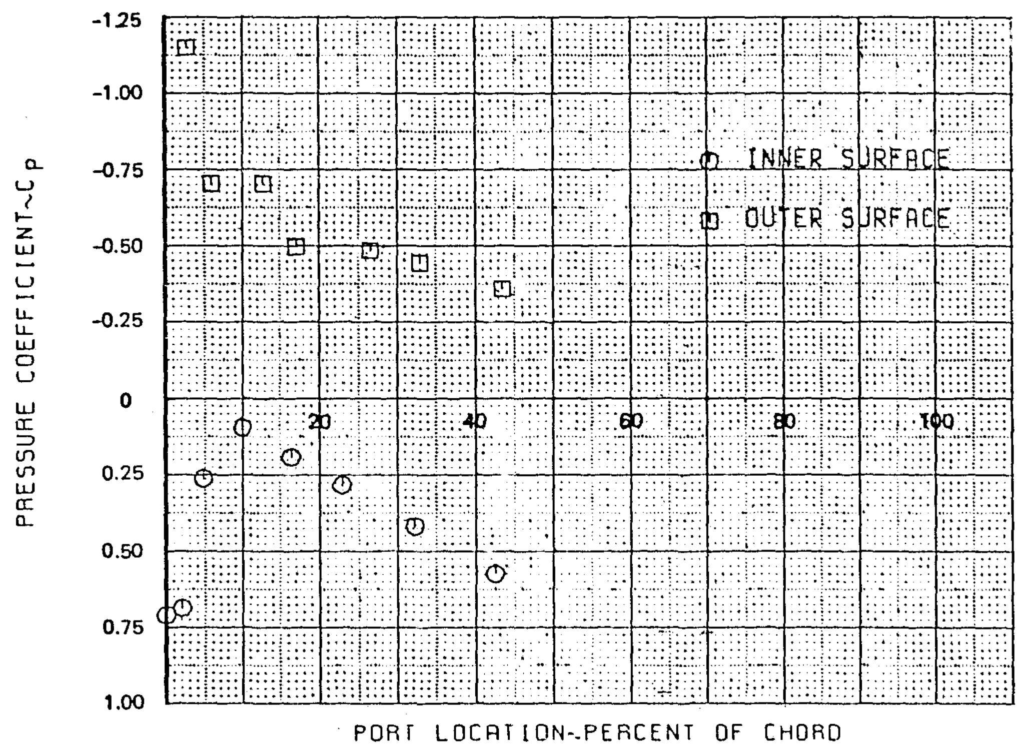


H_p	=	12 478m (40 938 ft)	M	=	0.767
GW	=	199 759 kg (440 393 lbm)	α	=	3.3 deg
Q	=	7.384 kPa (1.071 PSI)	FLAPS = 0 deg		
Vc	=	418.7 km/h (226.1 KTS)	LANDING GEAR UP		

Figure B-2. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

125209-151

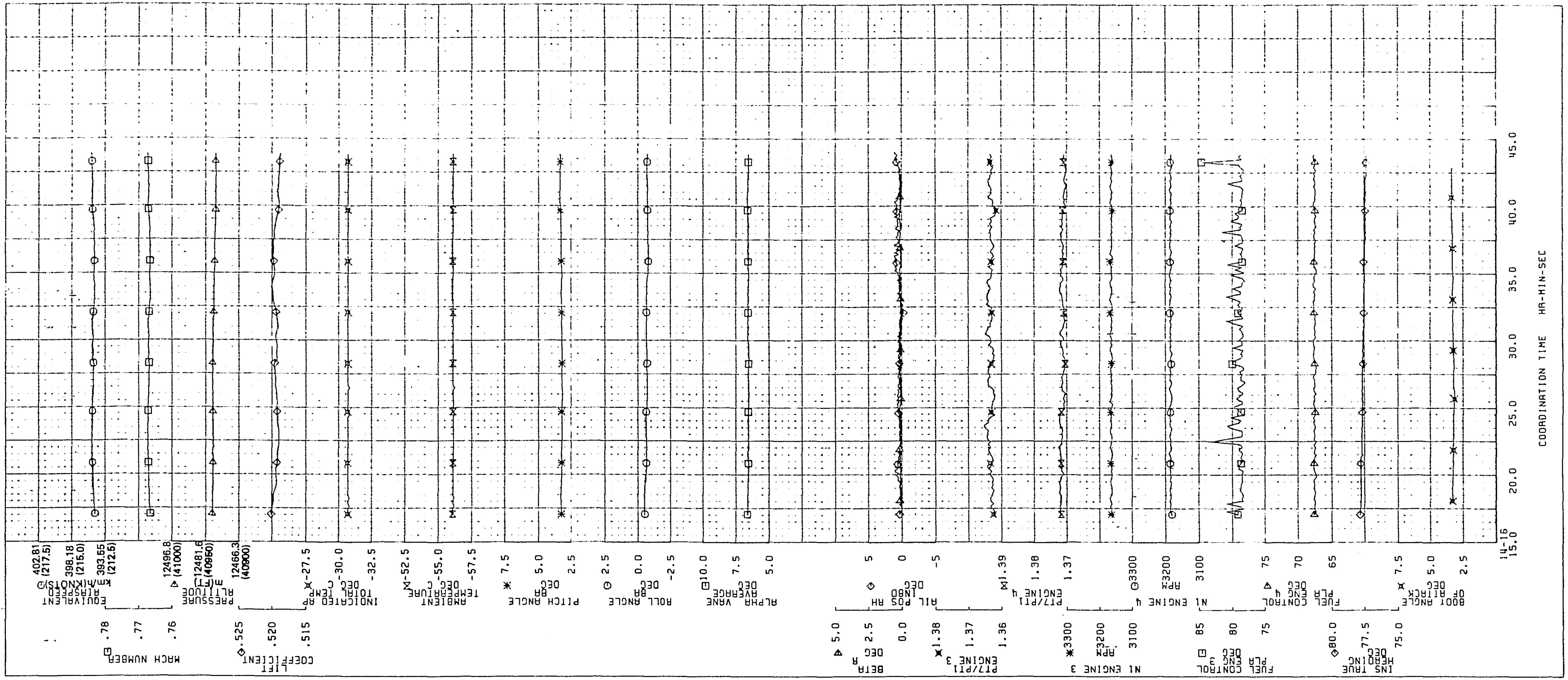
• ENGINE 4 ~ 300 DEGREE RADIAL –NAIL



H_P = 12 478m (40 938 ft)		M = 0.767	
GW = 199 759 kg (440 393 lbm)		α = 3.3 deg	
Q = 7.384 kPa (1.071 PSI)		FLAPS = 0 deg	
Vc = 418.7 km/h (226.1 KTS)		LANDING GEAR UP	

Figure B-2. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

125209-152

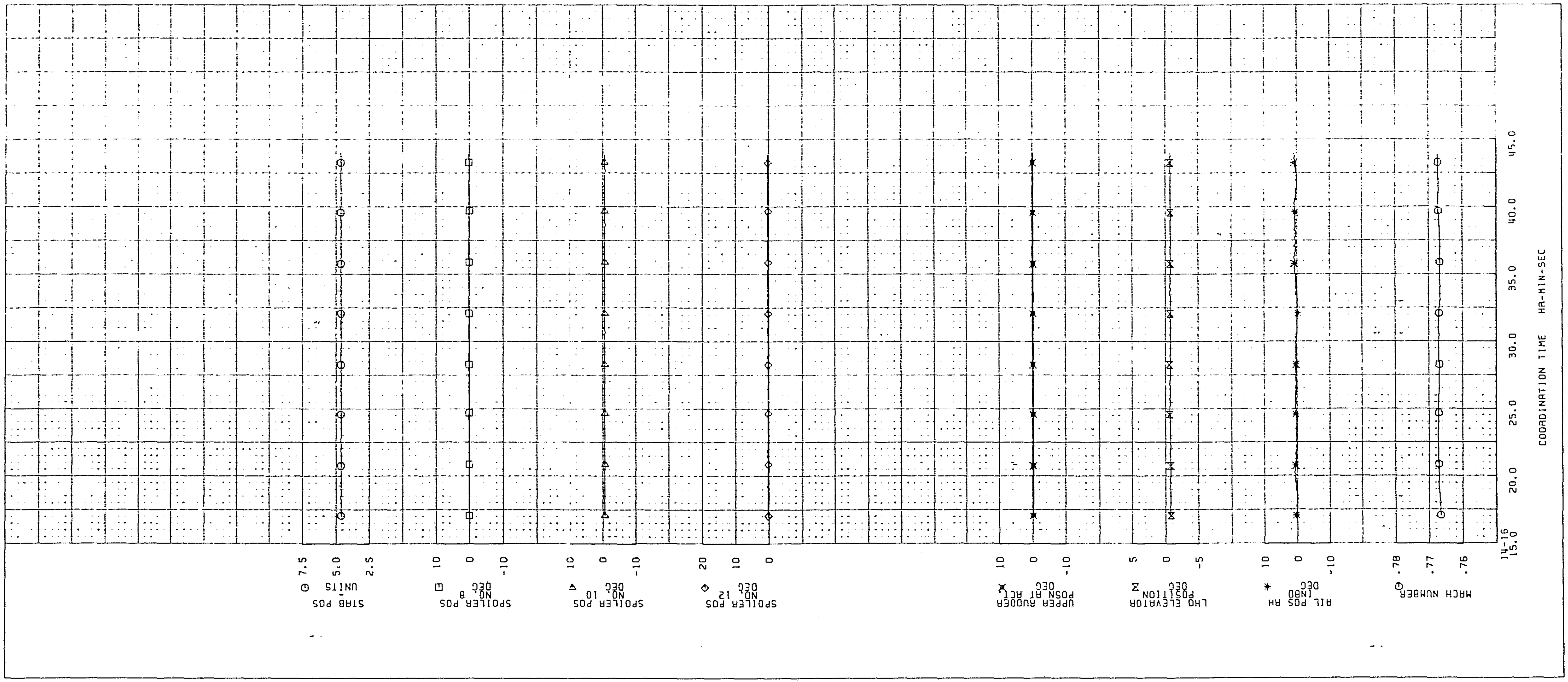


• CONDITION STABILITY

Hp	=	12 478m (40 938 ft)	M	=	0.767
GW	=	199 759 kg (440 393 lbm)	α	=	3.3 deg
Q	=	7.384 kPa (1.071 PSI)	FLAPS = 0 deg		
Vc	=	418.7 km/h (226.1 KTS)	LANDING GEAR UP		

125209-153

Figure B-2. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

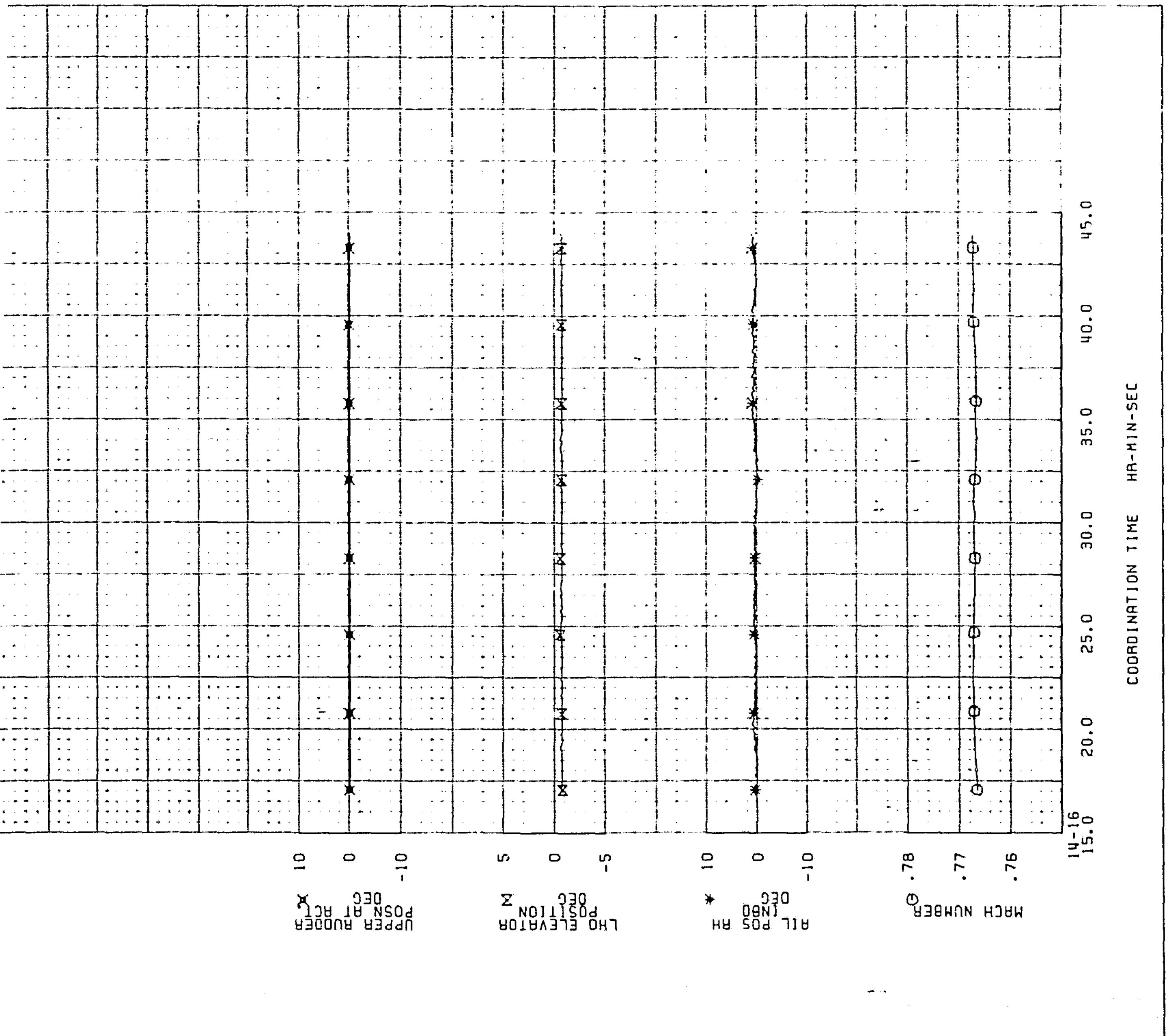


• CONTROL SURFACE POSITION

Hp	=	12 478m (40 938 ft)	M	=	0.767
GW	=	199 759 kg (440 393 lbm)	α	=	3.3 deg
Q	=	7.384 kPa (1.071 PSI)	FLAPS = 0 deg		
Vc	=	418.7 km/h (226.1 KTS)	LANDING GEAR UP		

125209-155

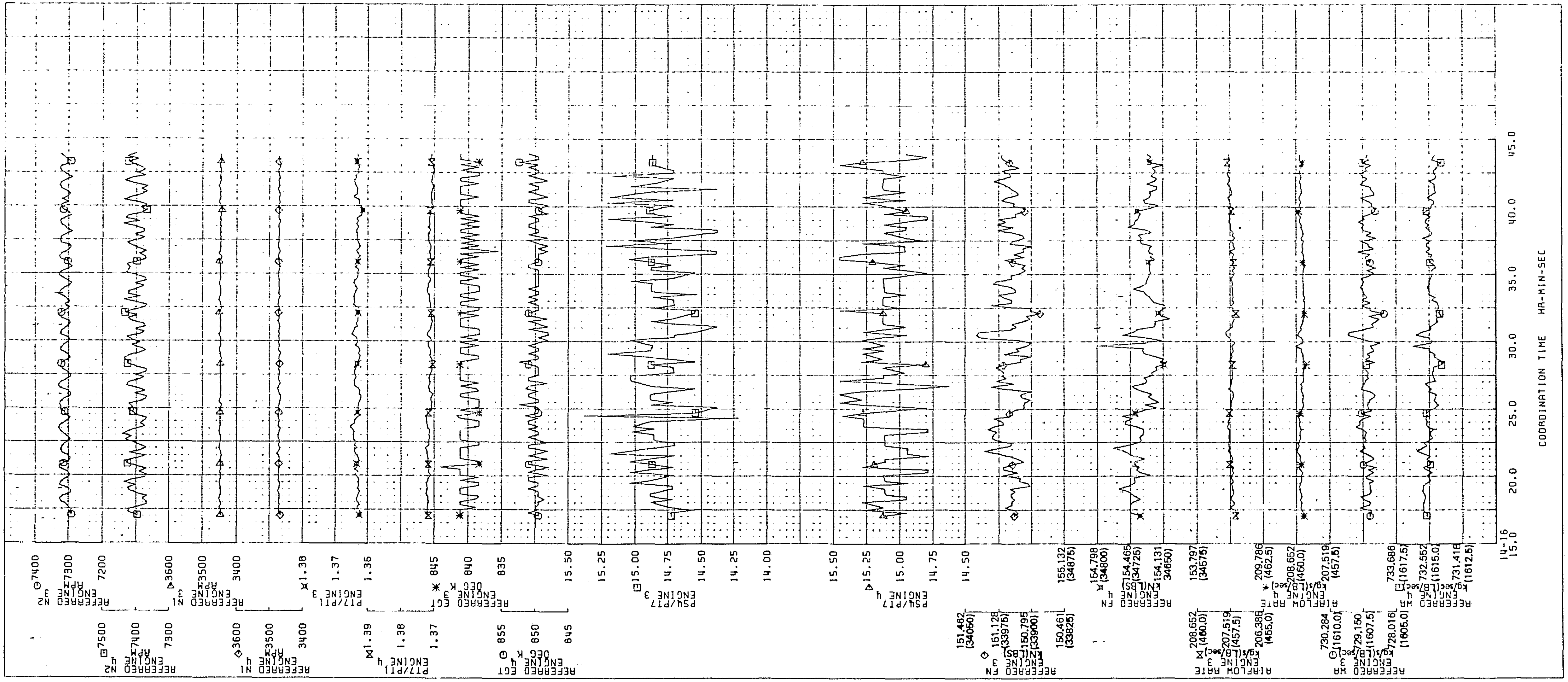
Figure B-2. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.002.1) (Continued)



Hp	=	12 478m (40 938 ft)	M	= 0.767
GW	=	199 759 kg (440 393 lbm)	α	= 3.3 deg
Q	=	7.384 kPa (1.071 PSI)	FLAPS = 0 deg	
Vc	=	418.7 km/h (226.1 KTS)	LANDING GEAR UP	

125209-155

Figure B-2. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.002.1) (Continued)



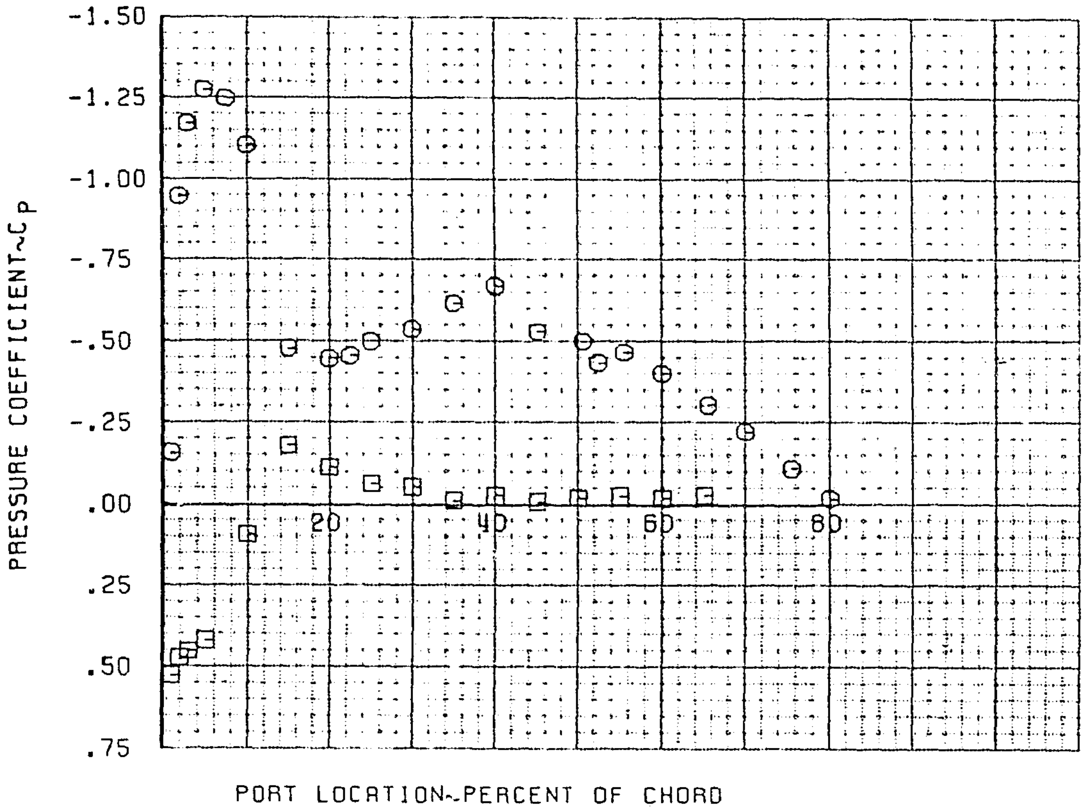
• ENGINE AIRFLOW

Hp	=	12 478m (40 938 ft)	M	=	0.767
GW	=	199 759 kg (440 393 lbm)	α	=	3.3 deg
Q	=	7.384 kPa (1.071 PSI)	FLAPS = 0 deg		
Vc	=	418.7 km/h (226.1 KTS)	LANDING GEAR UP		

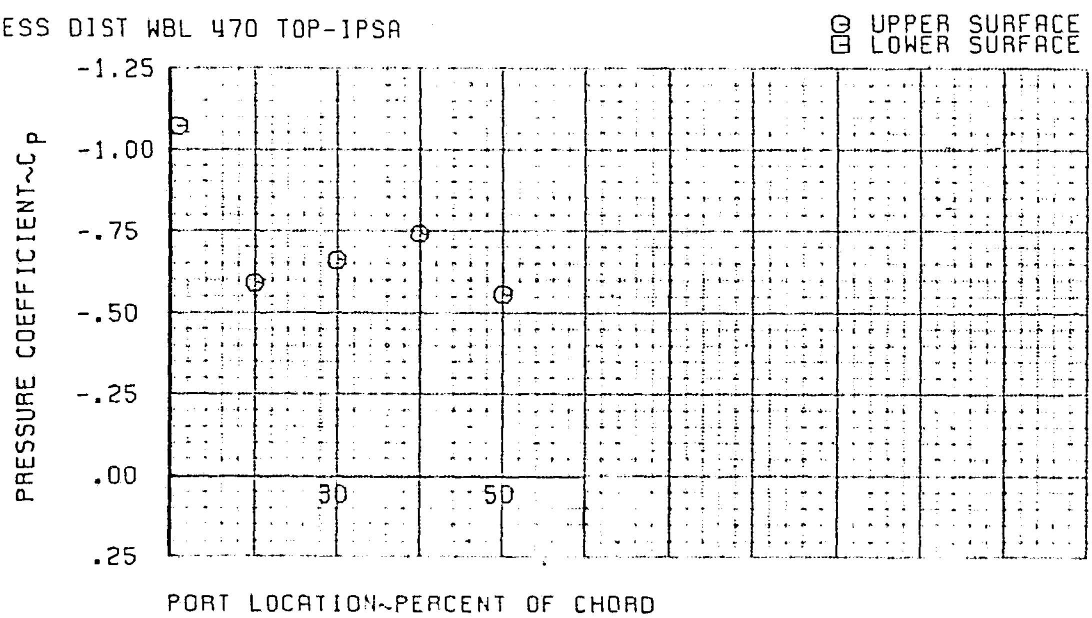
125209-154

Figure B-2. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.002.1) (Concluded)

• PRESSURE DIST WBL 445 - IPSA



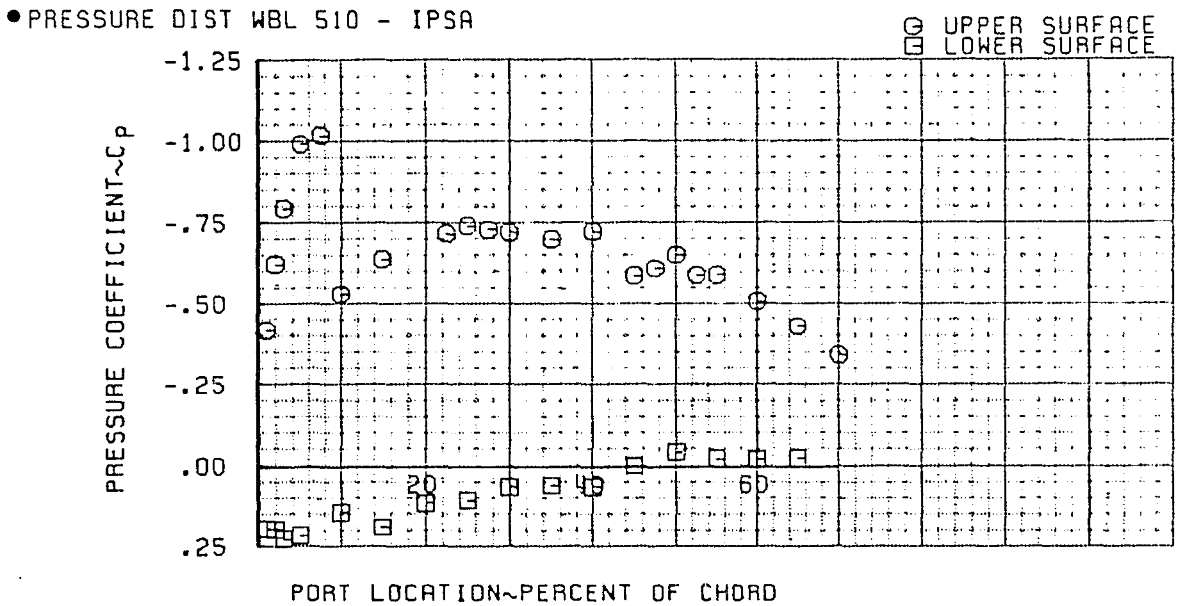
• PRESS DIST WBL 470 TOP-IPSA

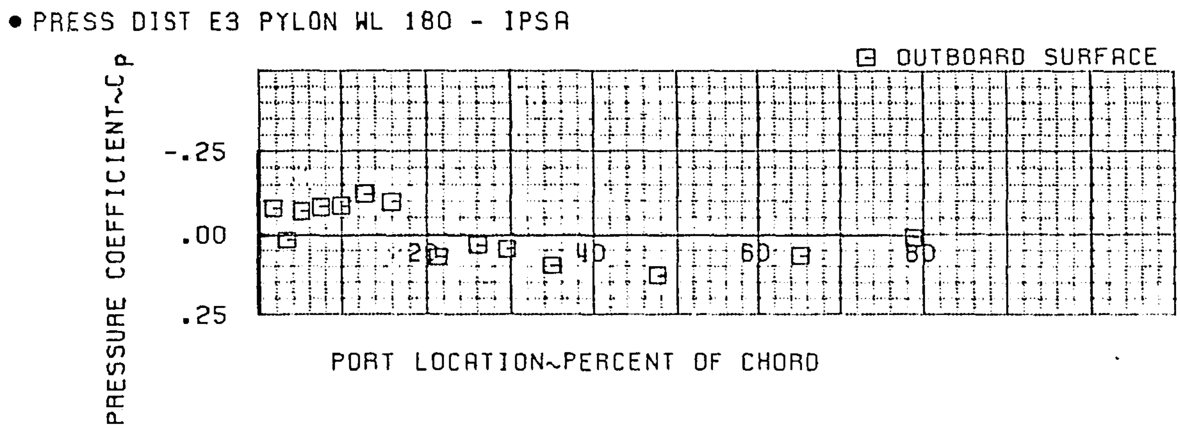


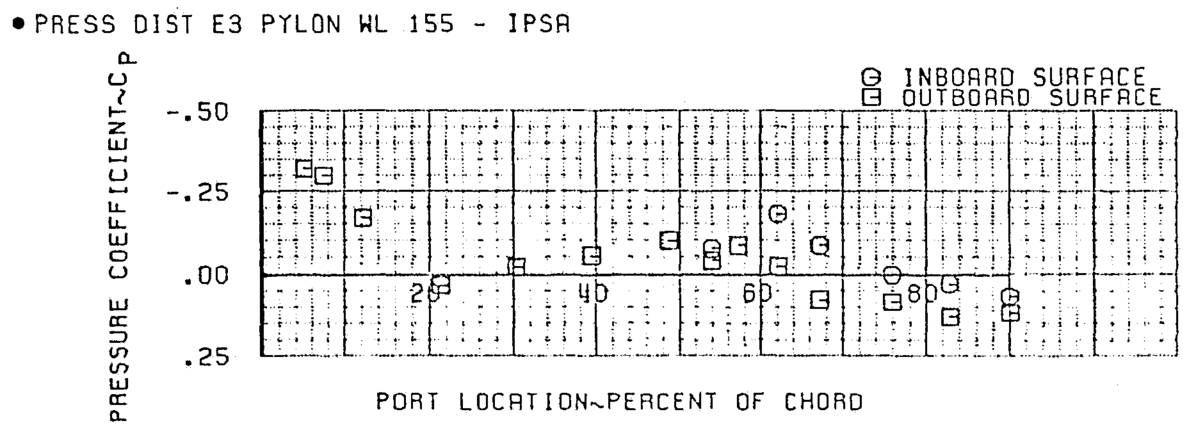
H_p	=	12 353m (40 528 ft)	M	=	0.798
GW	=	204 452 kg (450 740 lbm)	α	=	2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS = 0 deg		
Vc	=	442.1 km/h (238.7 KTS)	LANDING GEAR UP		

Figure B-3. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.003)

125209-156





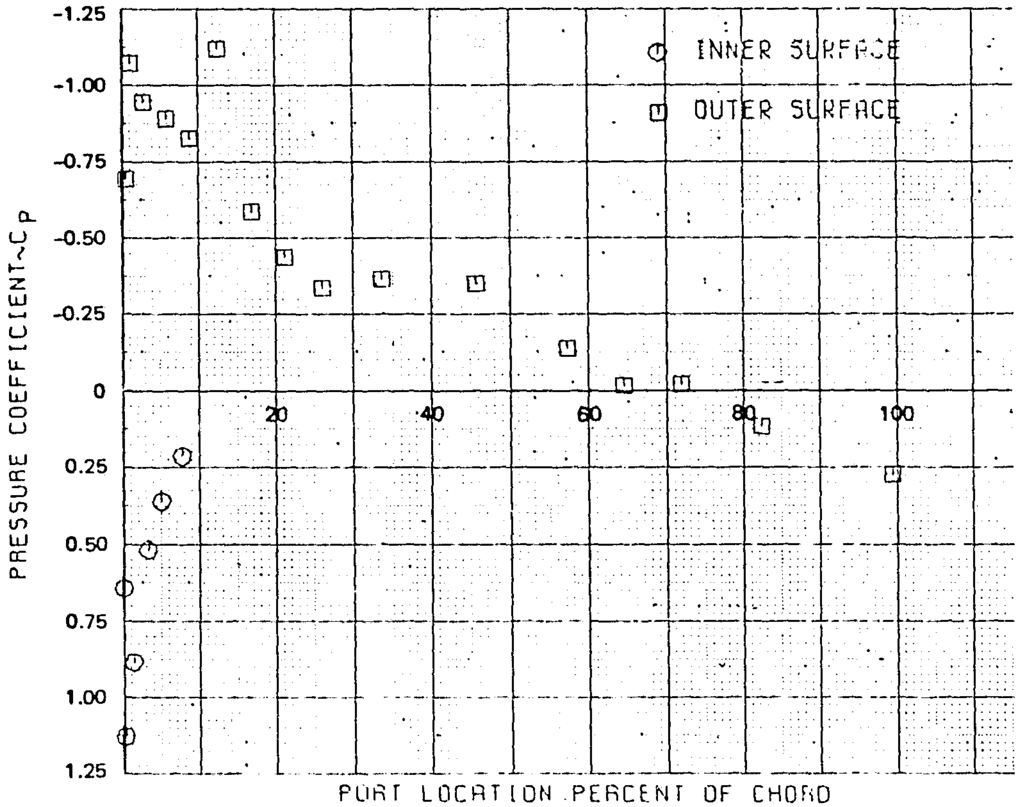


H_p	=	12 353m (40 528 ft)	M	=	0.798
GW	=	204 452 kg (450 740 lbm)	α	=	2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS = 0 deg		
Vc	=	442.1 km/h (238.7 KTS)	LANDING GEAR UP		

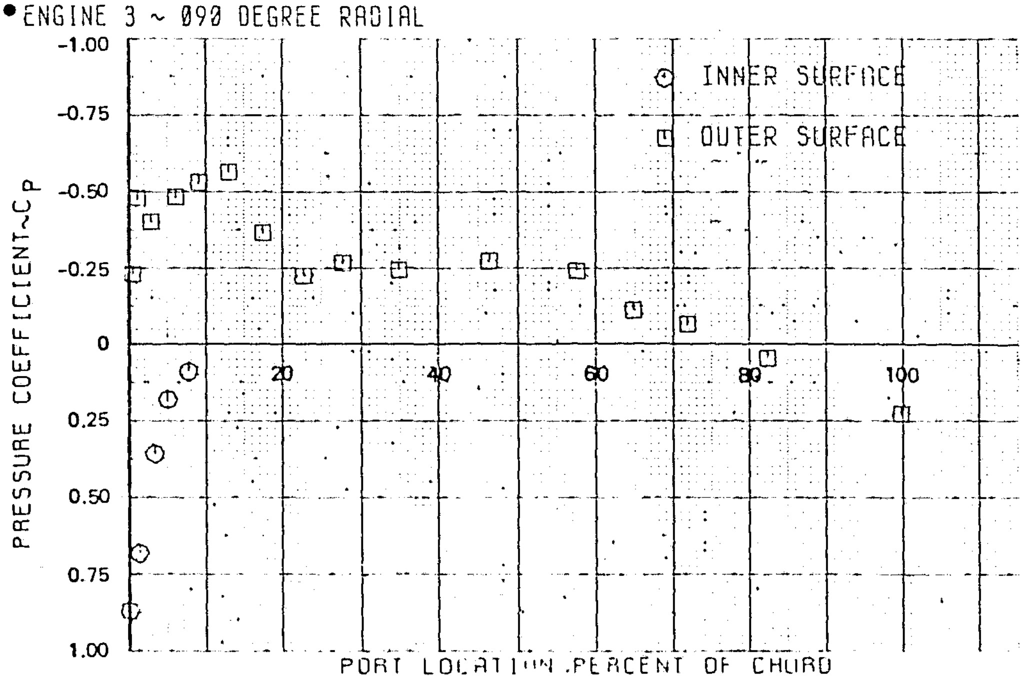
125209-157

Figure B-3. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.003) (Continued)

• ENGINE 3 ~ 030 DEGREE RADIAL



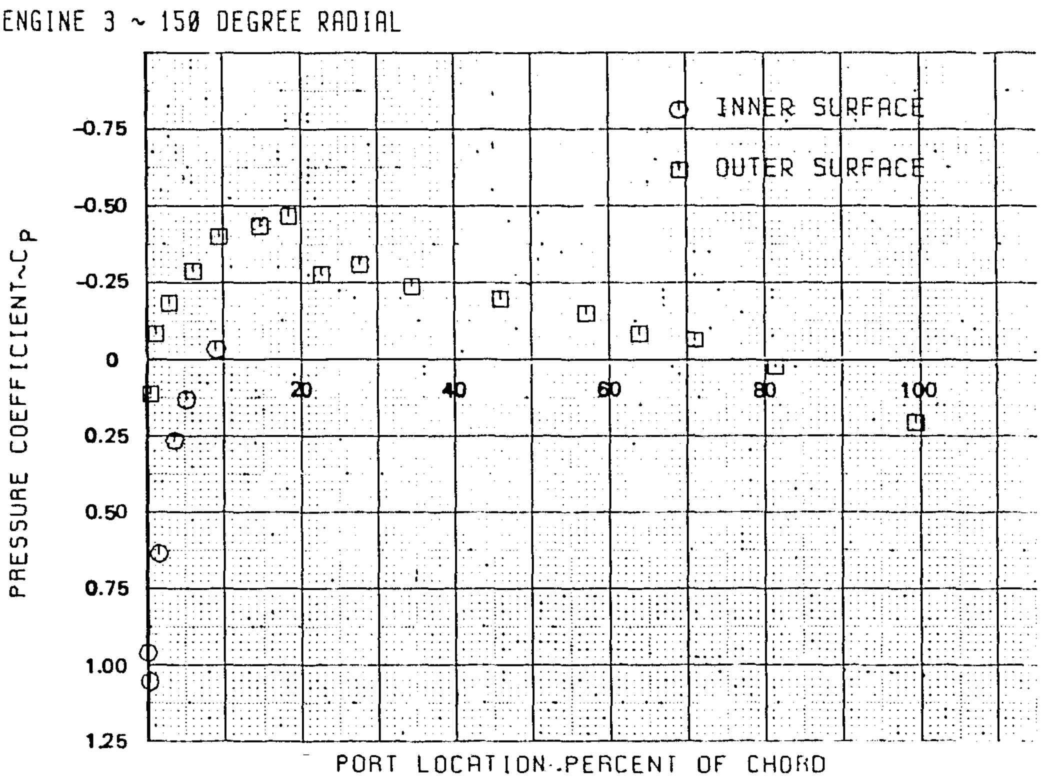
• ENGINE 3 ~ 090 DEGREE RADIAL

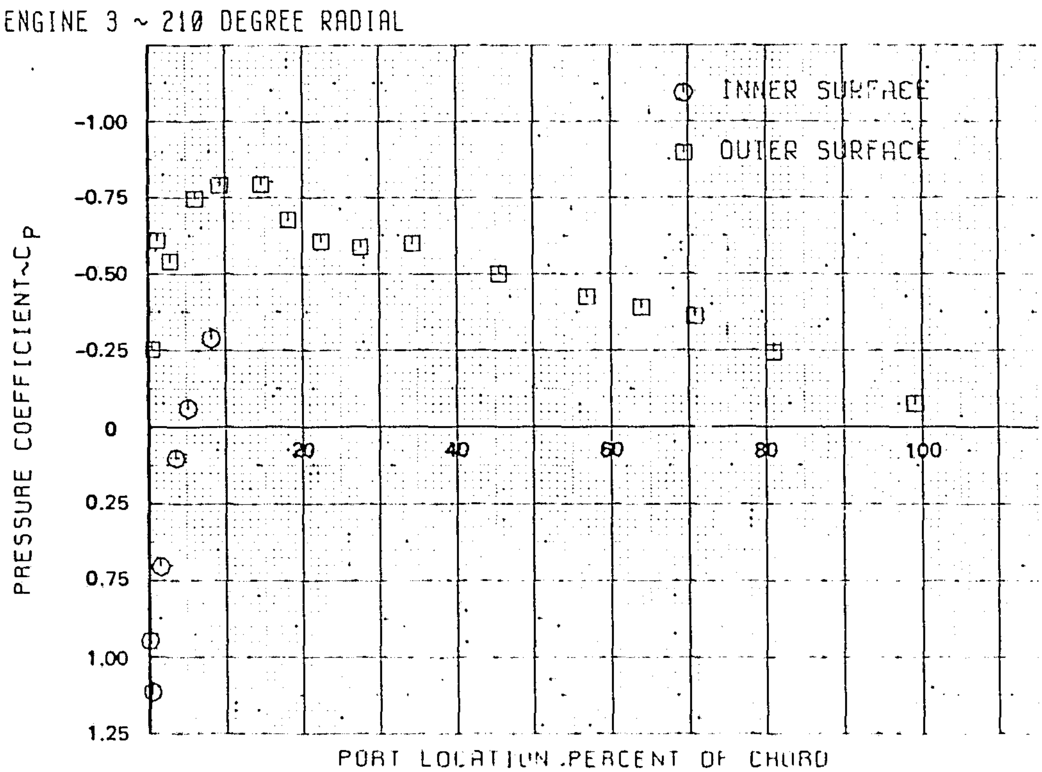


Hp	=	12 353m (40 528 ft)	M	=	0.798
GW	=	204 452 kg (450 740 lbm)	α	=	2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS = 0 deg		
Vc	=	442.1 km/h (238.7 KTS)	LANDING GEAR UP		

125209-158

Figure B-3. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.003)(Continued)



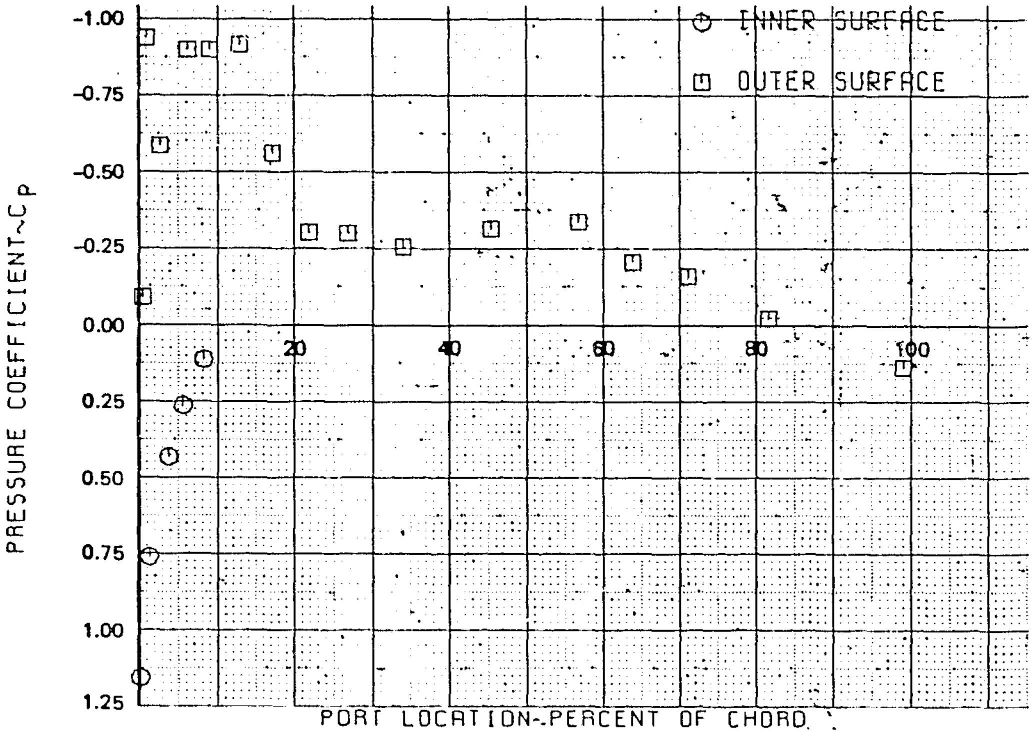


H_p	= 12 353m (40 528 ft)	M	= 0.798
GW	= 204 452 kg (450 740 lbm)	α	= 2.8 deg
Q	= 8.156 kPa (1.183 PSI)	FLAPS = 0 deg	
Vc	= 442.1 km/h (238.7 KTS)	LANDING GEAR UP	

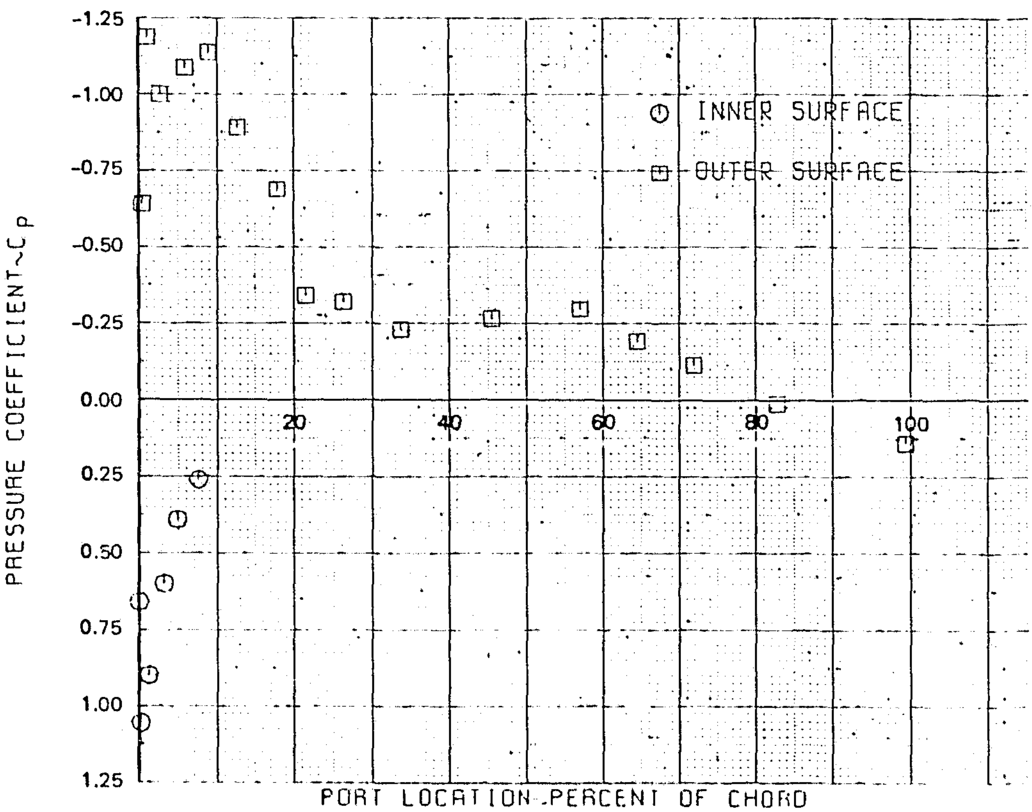
Figure B-3. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.003)(Continued)

125209-159

• ENGINE 3 ~ 270 DEGREE RADIAL –NAIL



• ENGINE 3 ~ 330 DEGREE RADIAL –NAIL

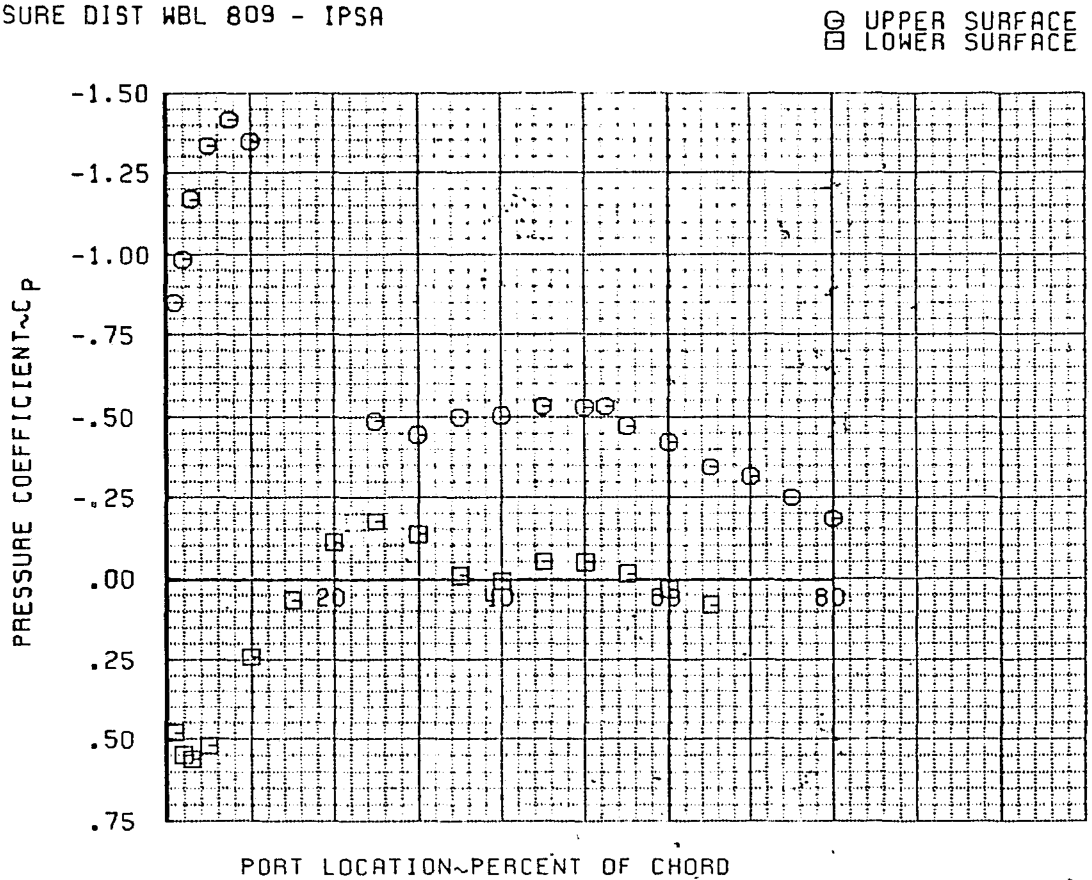


H_p	=	12 353m (40 528 ft)	M	=	0.798
GW	=	204 452 kg (450 740 lbm)	α	=	2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS = 0 deg		
Vc	=	442.1 km/h (238.7 KTS)	LANDING GEAR UP		

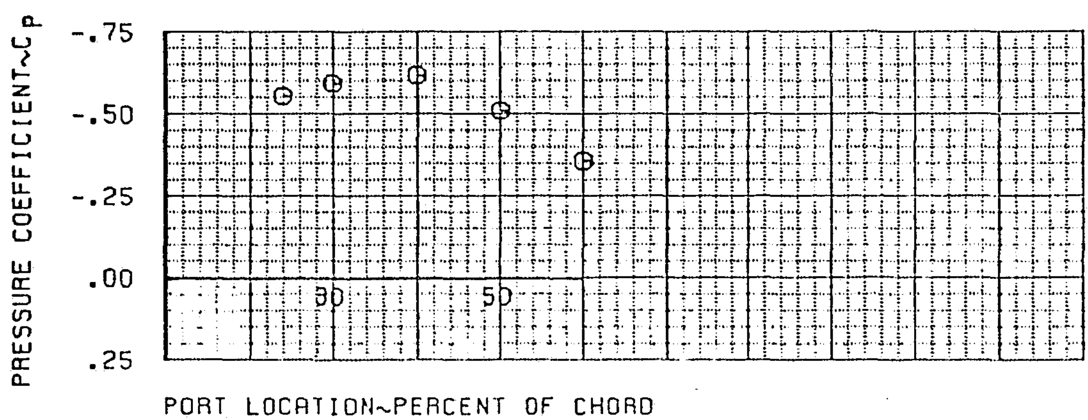
Figure B-3. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.003)(Continued)

125209-160

• PRESSURE DIST WBL 809 - IPSA



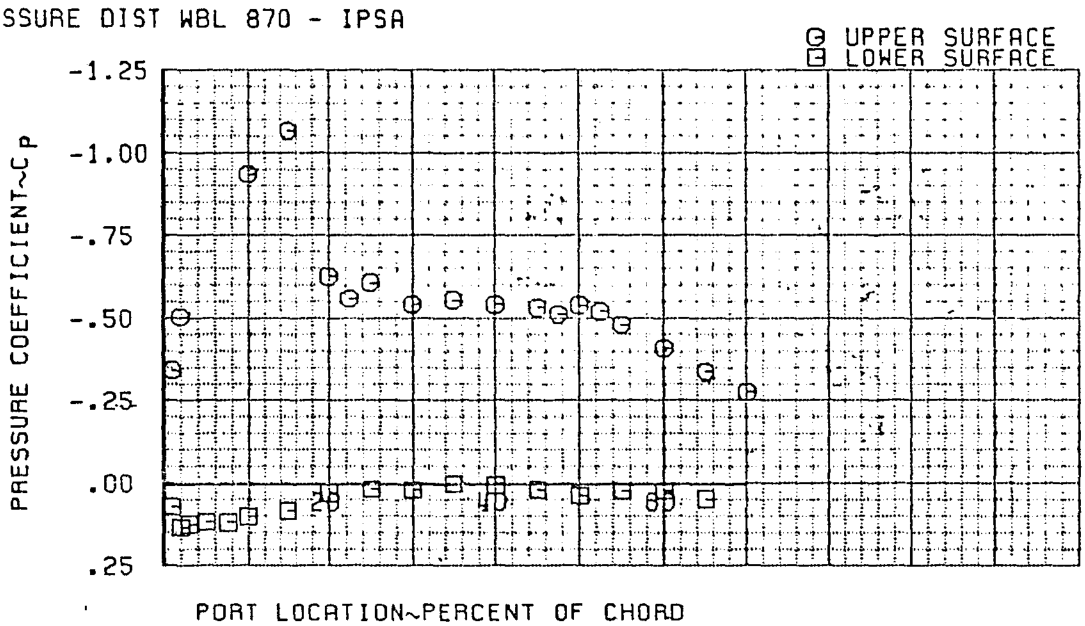
• PRESS DIST WBL 834 TOP-IPSA

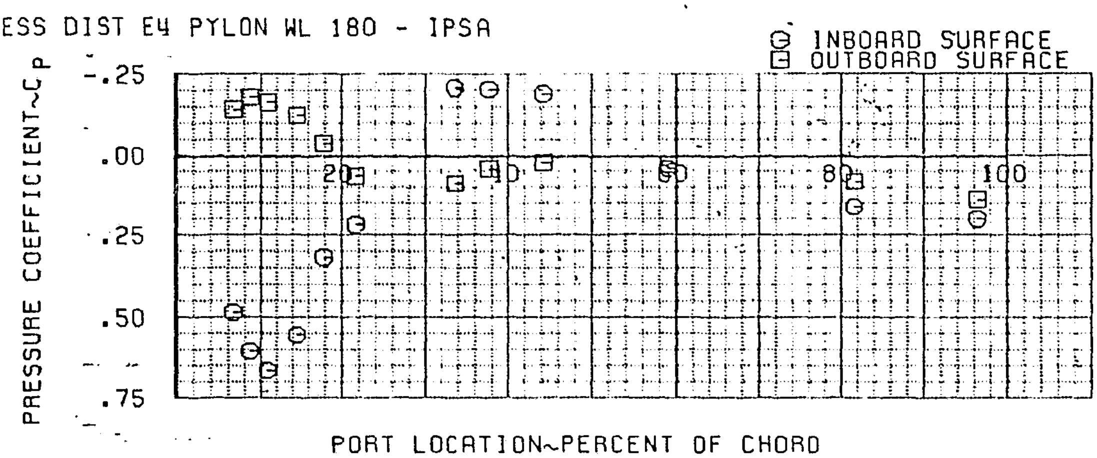


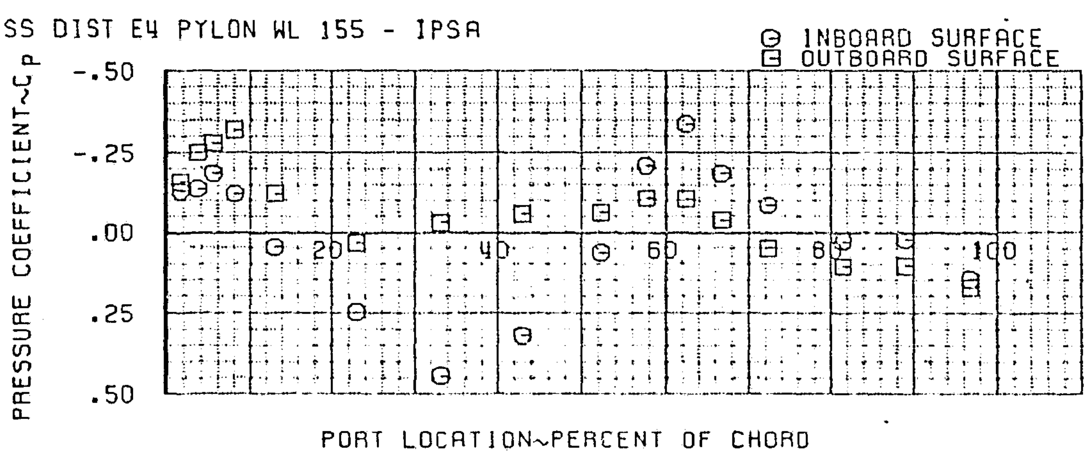
Hp	=	12 353m (40 528 ft)	M	=	0.798
GW	=	204 452 kg (450 740 lbm)	α	=	2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS = 0 deg		
Vc	=	442.1 km/h (238.7 KTS)	LANDING GEAR UP		

125209-161

Figure B-3. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.003)(Continued)



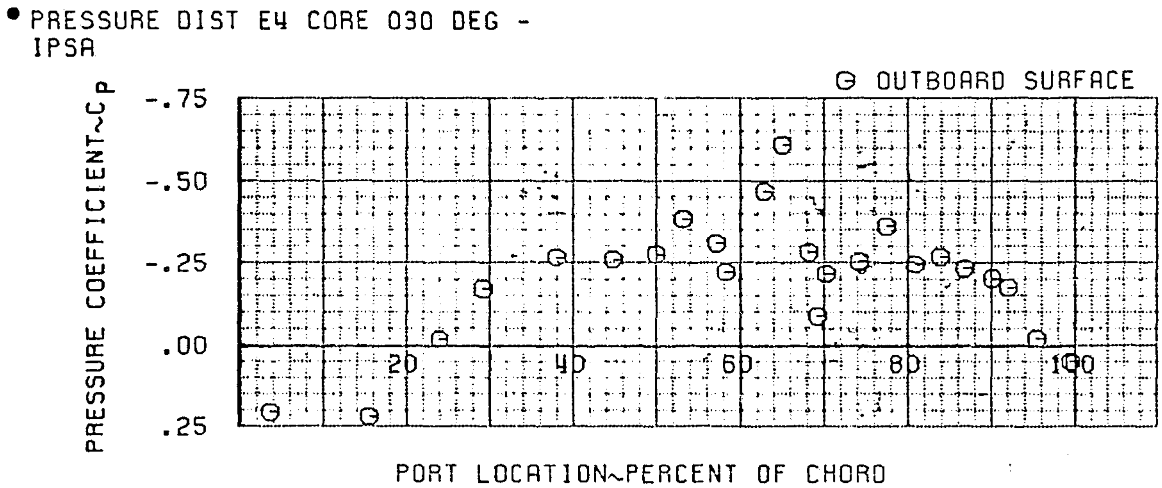


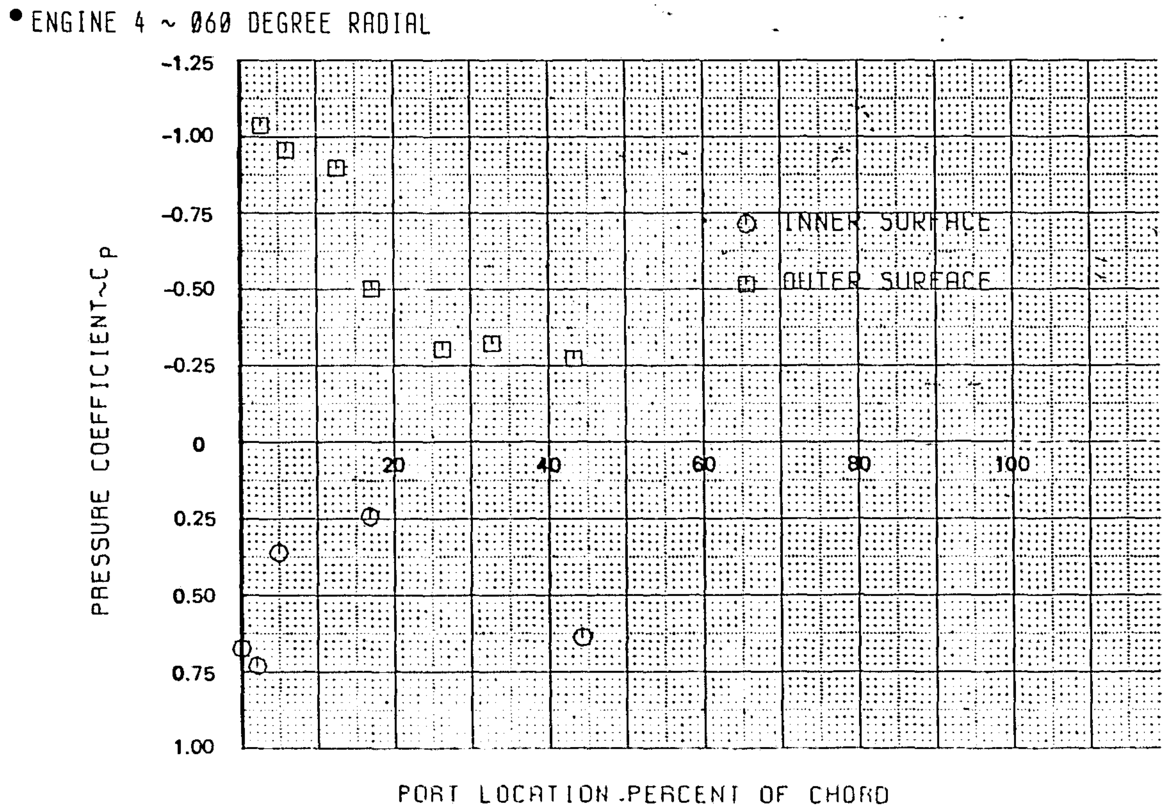


H_p	=	12 353m (40 528 ft)	M	=	0.798
GW	=	204 452 kg (450 740 lbm)	α	=	2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS = 0 deg		
Vc	=	442.1 km/h (238.7 KTS)	LANDING GEAR UP		

Figure B-3. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.003) (Continued)

125209-162



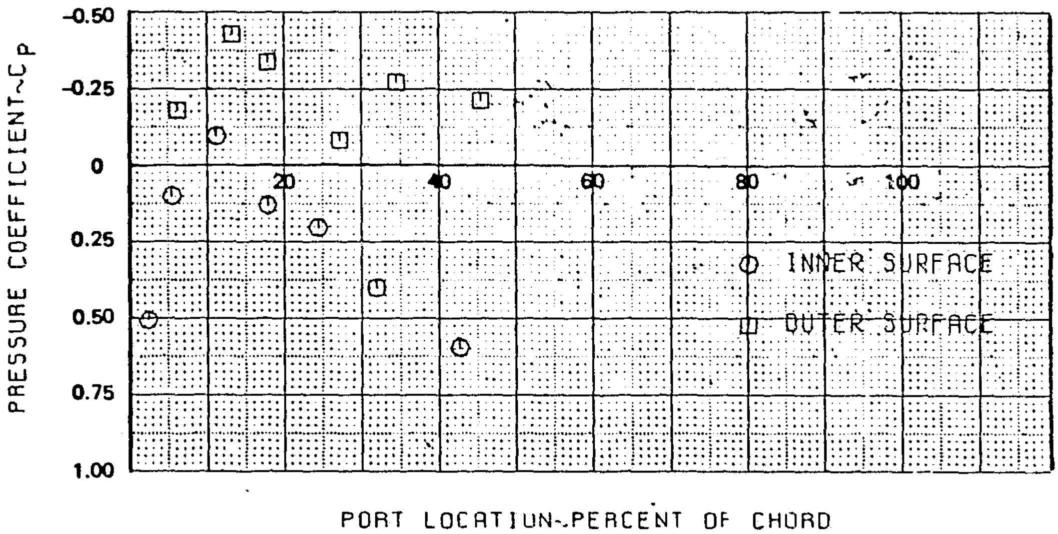


H_p	=	12 353m (40 528 ft)	M	=	0.798
GW	=	204 452 kg (450 740 lbm)	α	=	2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS = 0 deg		
Vc	=	442.1 km/h (238.7 KTS)	LANDING GEAR UP		

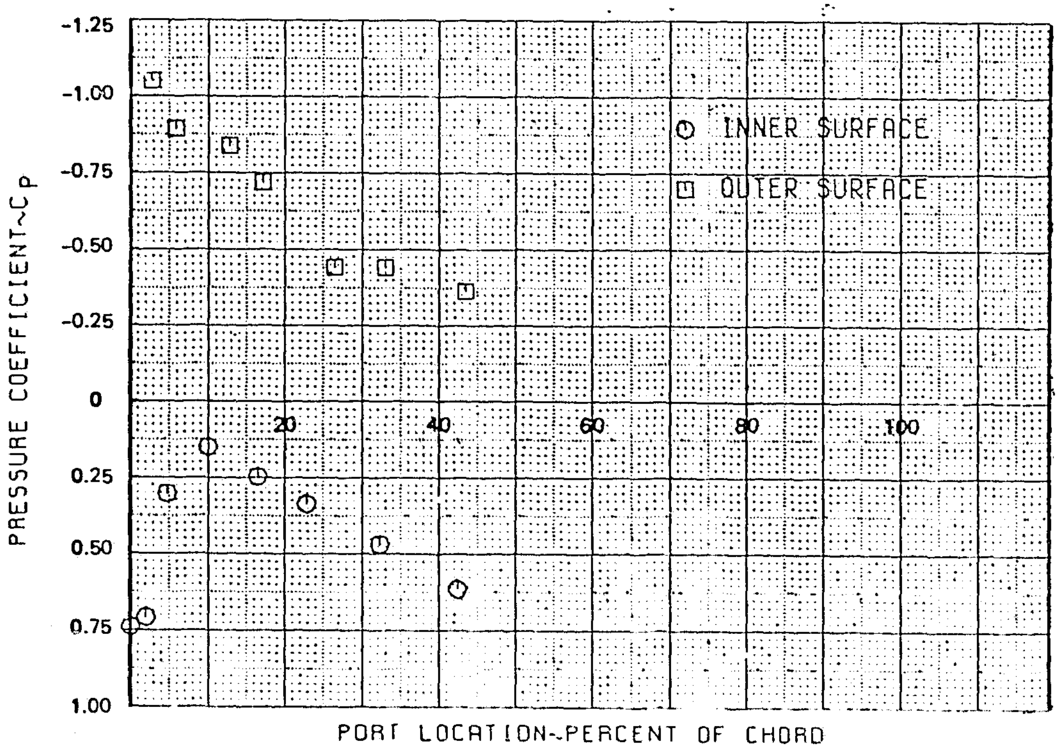
125209-163

Figure B-3. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.003)(Continued)

• ENGINE 4 ~ 180 DEGREE RADIAL



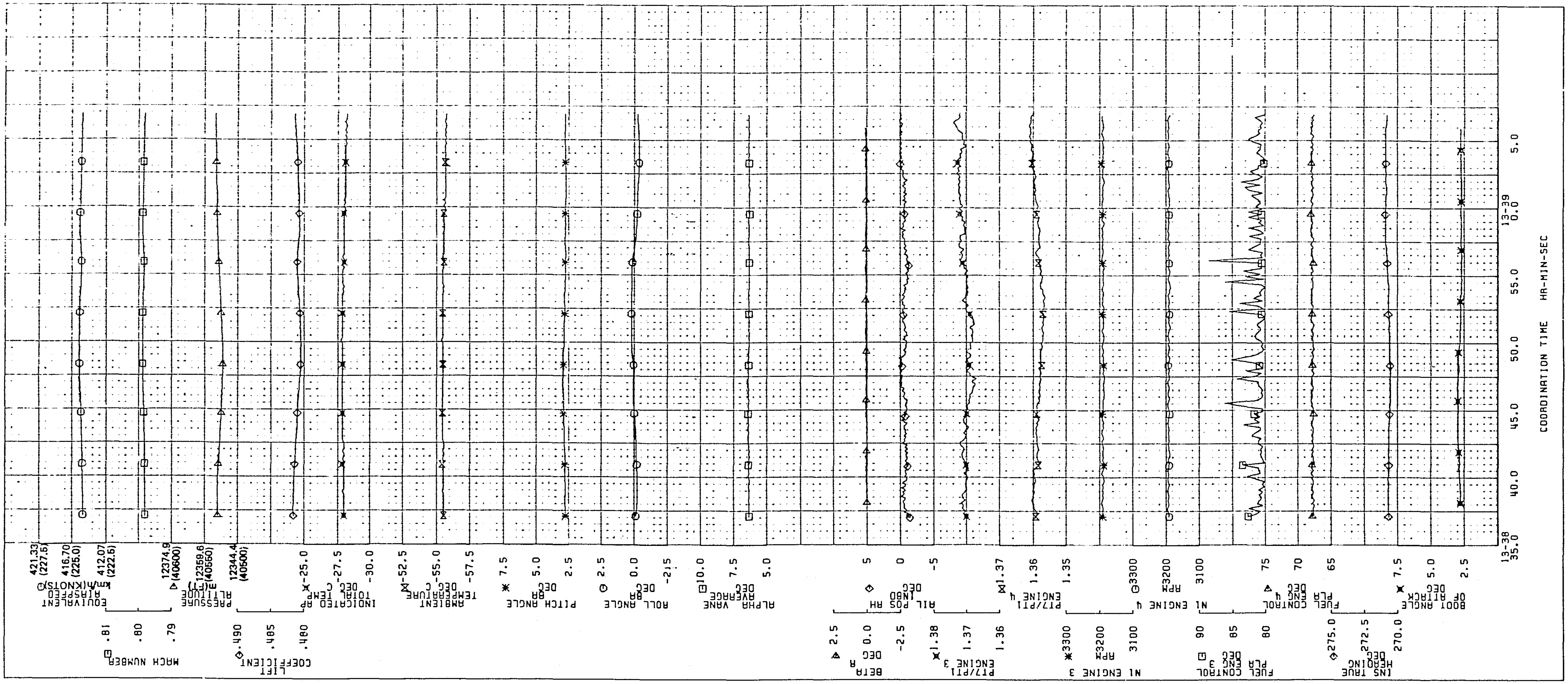
• ENGINE 4 ~ 300 DEGREE RADIAL



Hp	= 12 353m (40 528 ft)	M	= 0.798
GW	= 204 452 kg (450 740 lbm)	α	= 2.8 deg
Q	= 8.156 kPa (1.183 PSI)	FLAPS = 0 deg	
Vc	= 442.1 km/h (238.7 KTS)	LANDING GEAR UP	

125209-164

Figure B-3. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.003) (Continued)

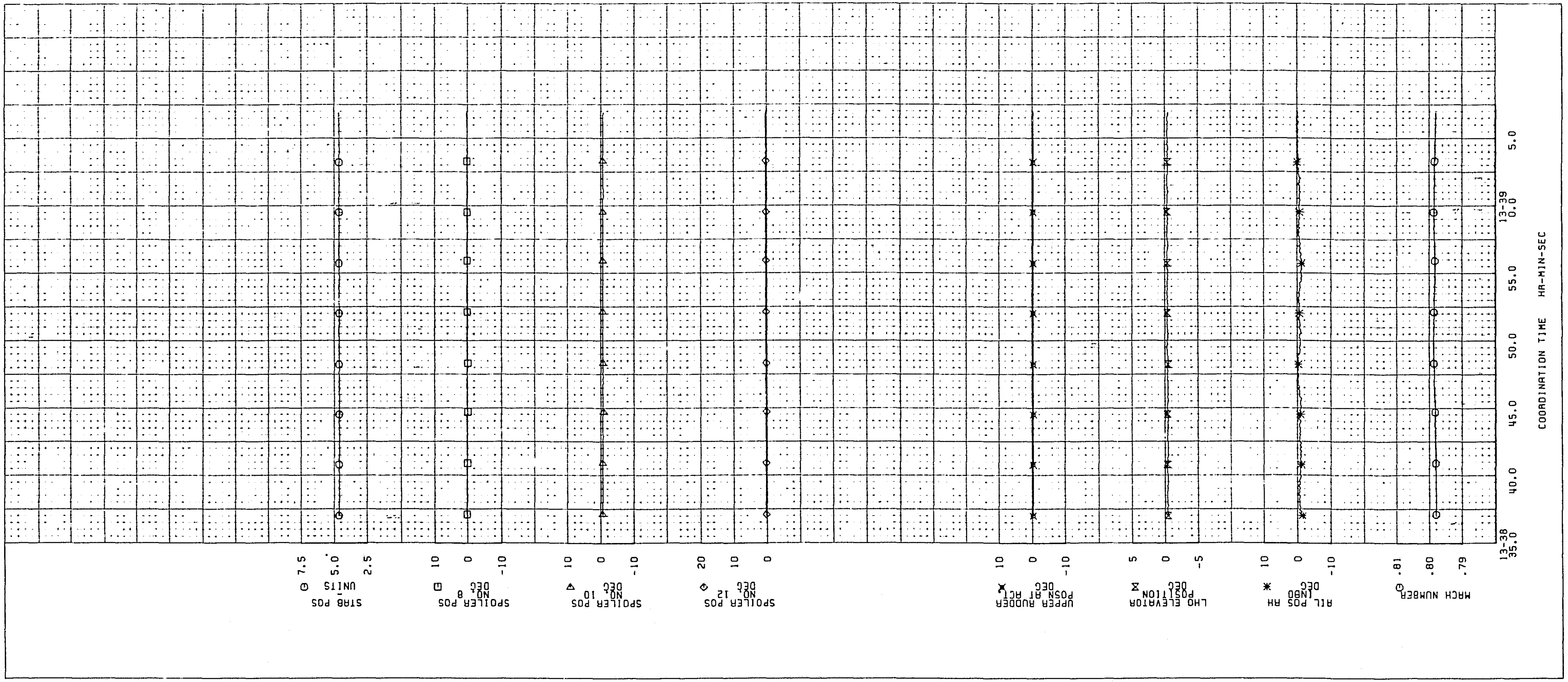


• CONDITION STABILITY

H_p	= 12 353m (40 528 ft)	M	= 0.798
GW	= 204 452 kg (450 740 lbm)	α	= 2.8 deg
Q	= 8.156 kPa (1.183 PSI)	FLAPS = 0 deg	
Vc	= 442.1 km/h (238.7 KTS)	LANDING GEAR UP	

Figure B-3. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.003)(Continued)

125209-165

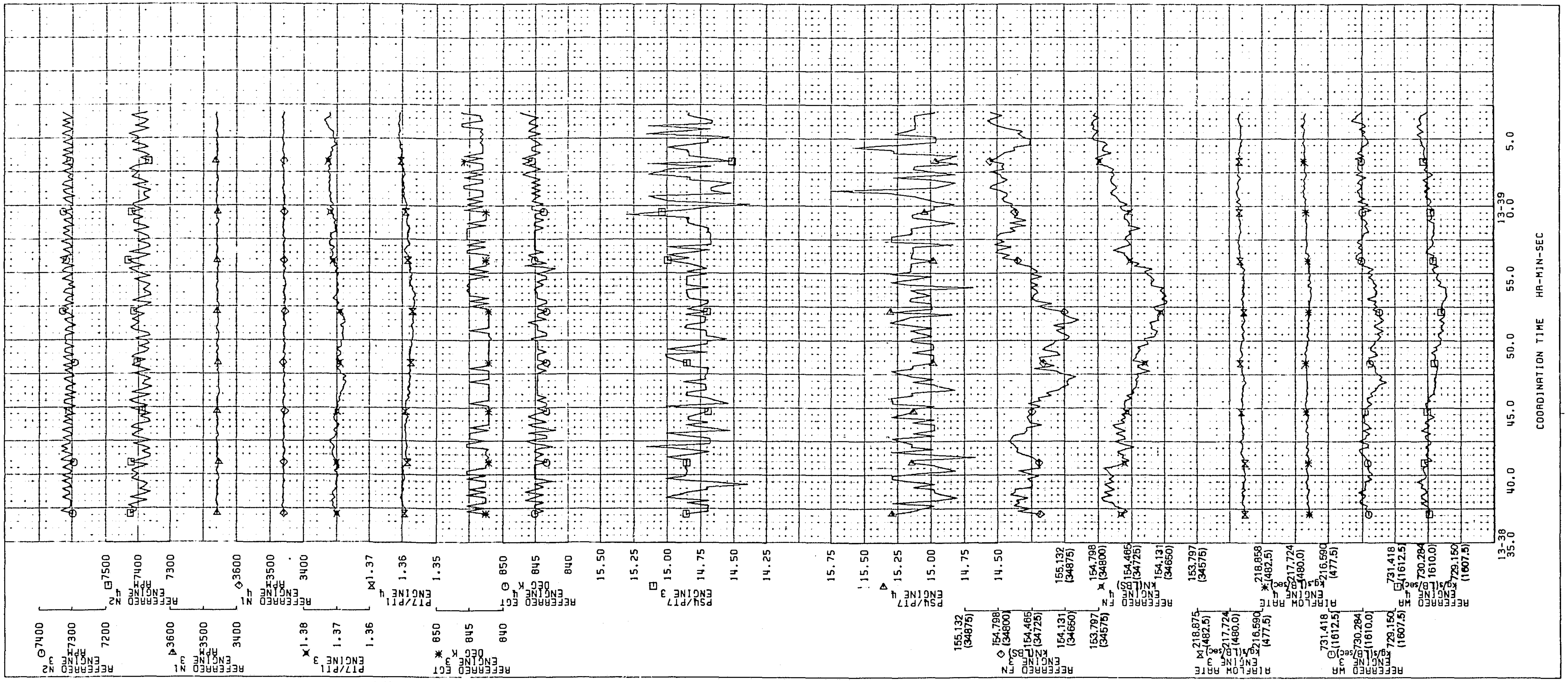


• CONTROL SURFACE POSITION

H_p = 12 353m (40 528 ft)	M = 0.798	
GW = 204 452 kg (450 740 lbm)	α = 2.8 deg	
Q = 8.156 kPa (1.183 PSI)	FLAPS = 0 deg	
Vc = 442.1 km/h (238.7 KTS)	LANDING GEAR UP	

125209-167

Figure B-3. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.003) (Continued)

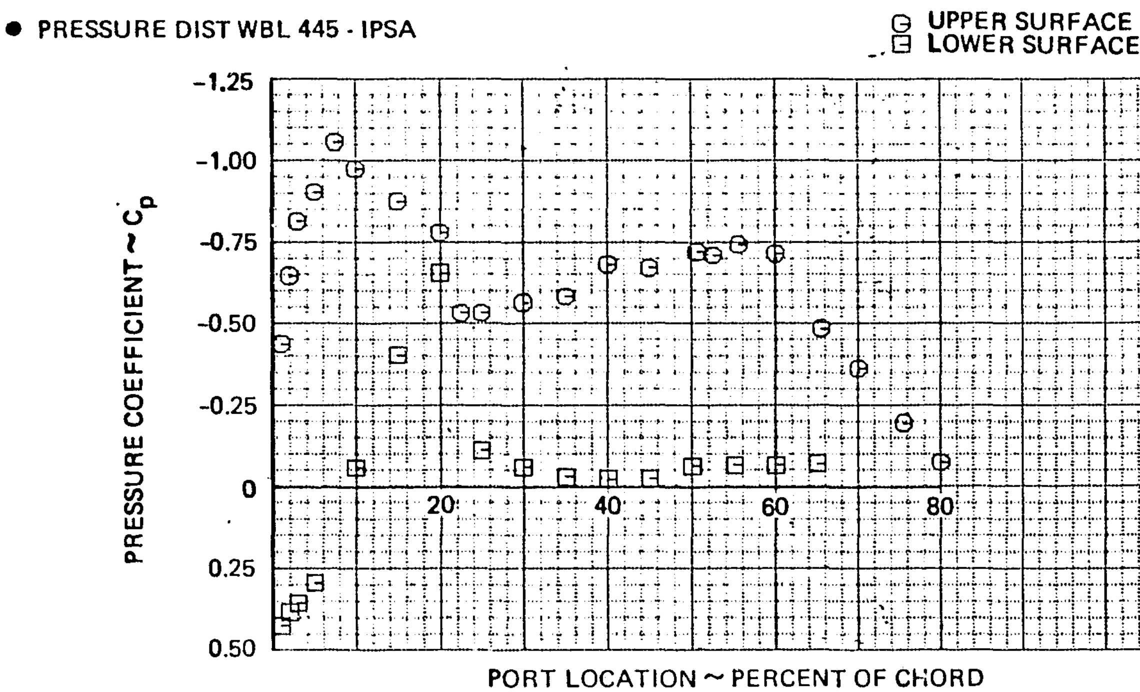


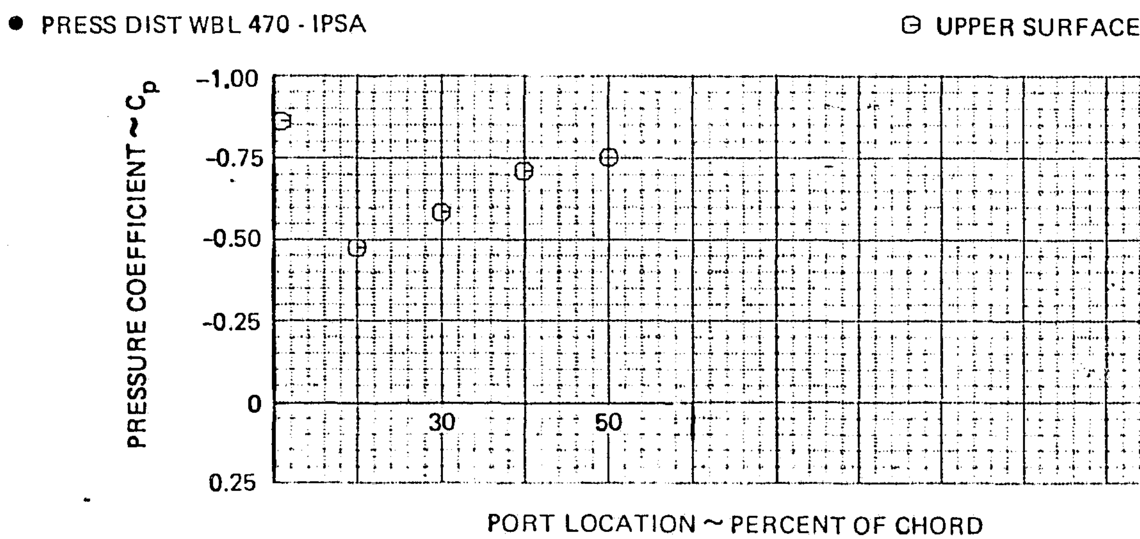
• ENGINE AIRFLOW

H_p	=	12 353m (40 528 ft)	M	= 0.798
GW	=	204 452 kg (450 740 lbm)	α	= 2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS = 0 deg	
Vc	=	442.1 km/h (238.7 KTS)	LANDING GEAR UP	

125209-165

Figure B-3. Pressure Coefficient Plots (Test 273-09, Condition 1.00.137.003) (Concluded)

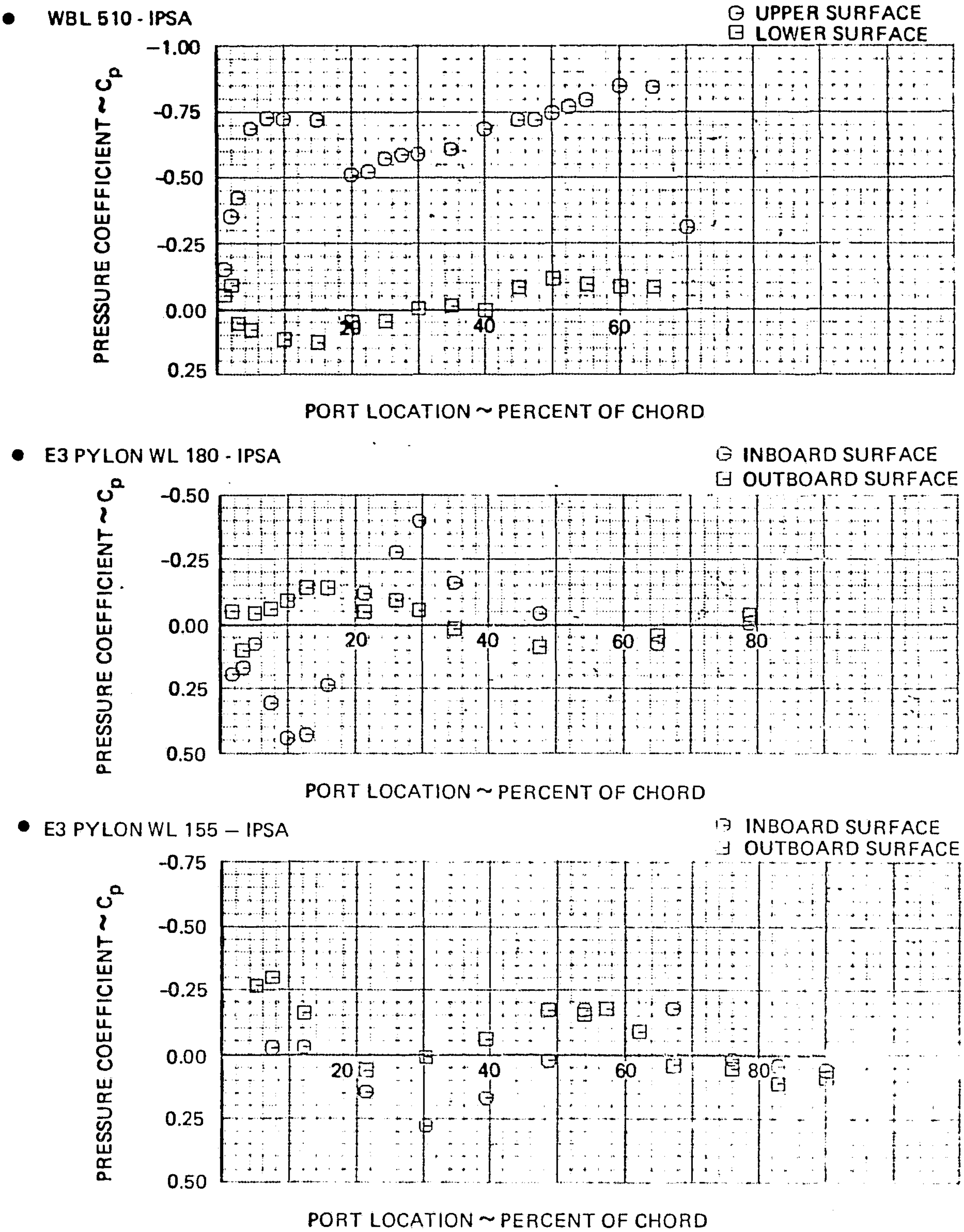




H_P	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
Vc	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

125209-215

Figure B-4. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.001.1)

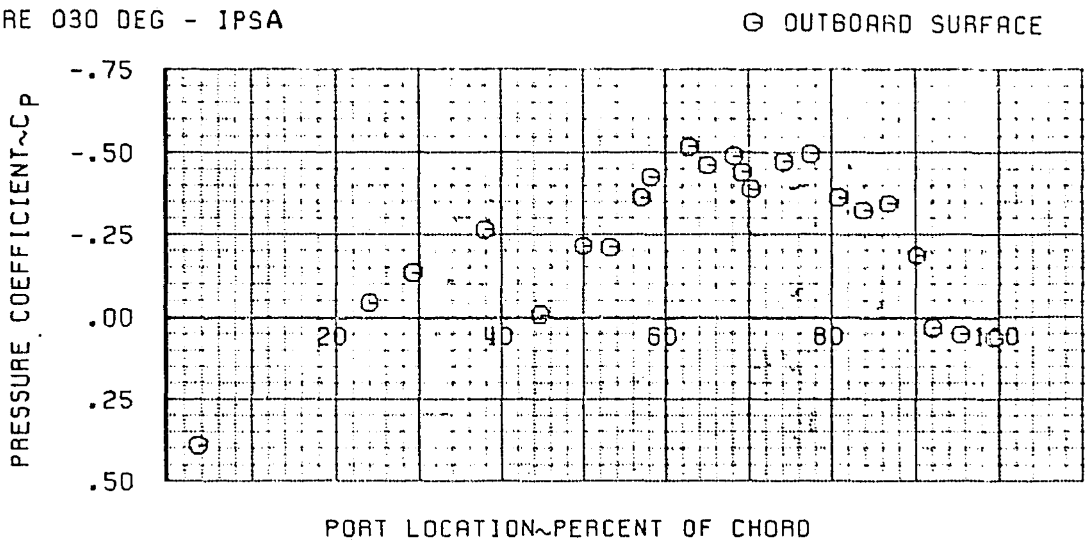


H_P	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 9 deg		
Vc	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

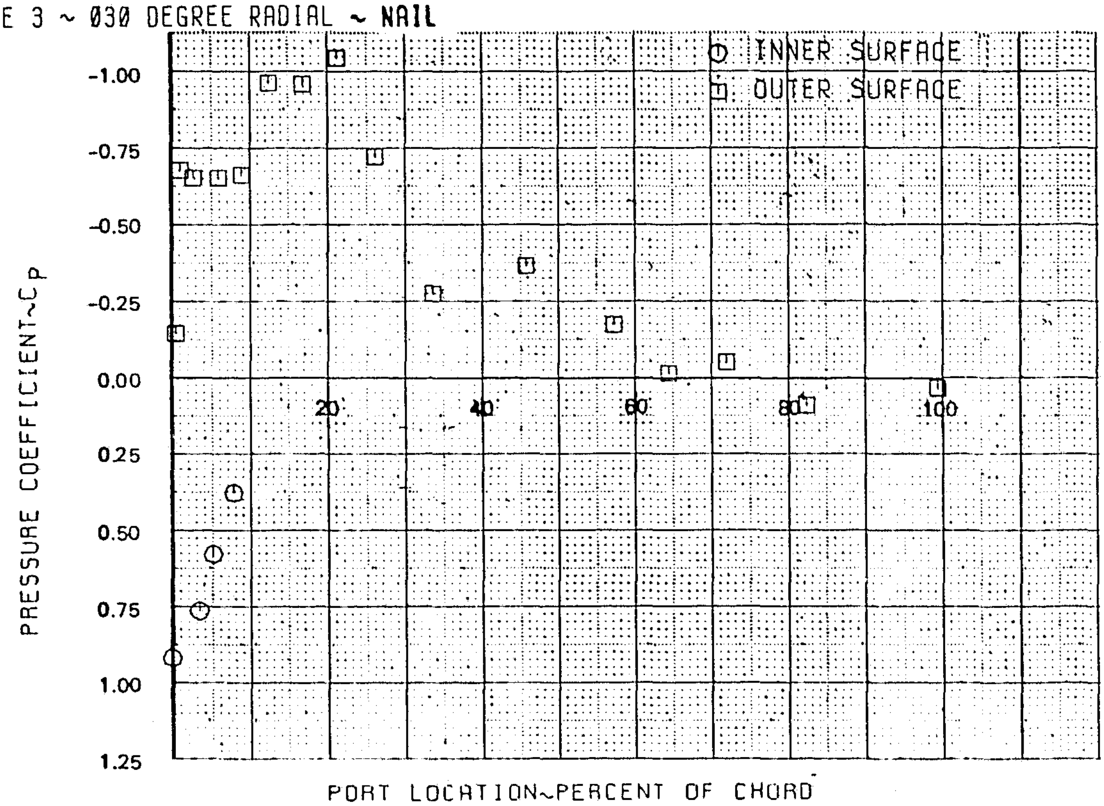
125209-216

Figure B-4. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)

• E3 CORE 030 DEG - IPSA



• ENGINE 3 ~ 030 DEGREE RADIAL ~ NAIL

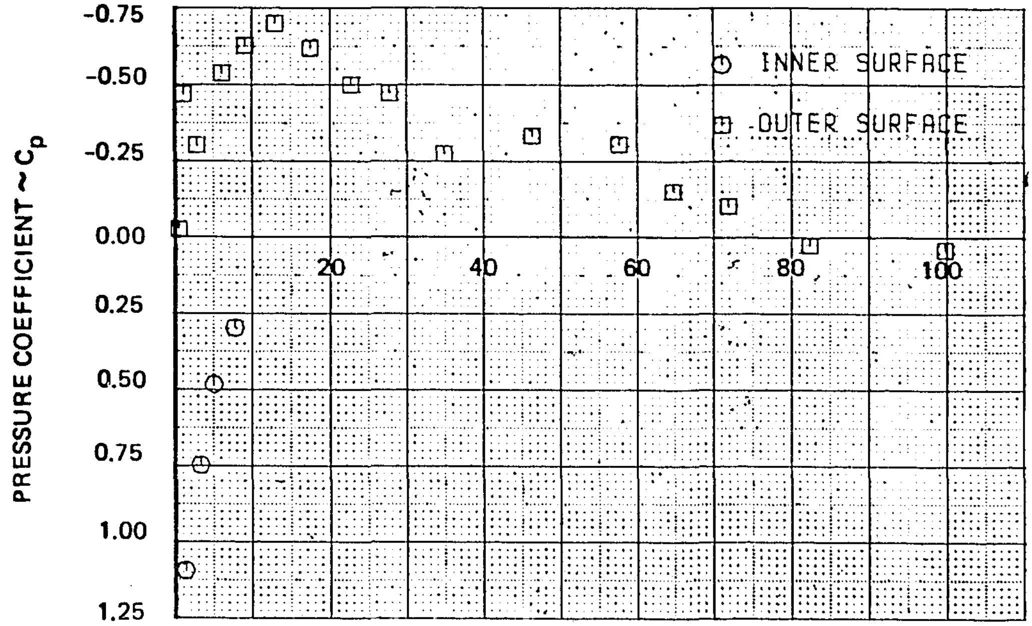


H_P	= 11 909m (39 073 ft)	M	= 0.864
GW	= 219 686 kg (484 325 lbm)	α	- 1.9 deg
Q	= 10.239 kPa (1.485 PSI)	FLAPS = 0 deg	
Vc	= 499.7 km/h (269.8 KTS)	LANDING GEAR UP	

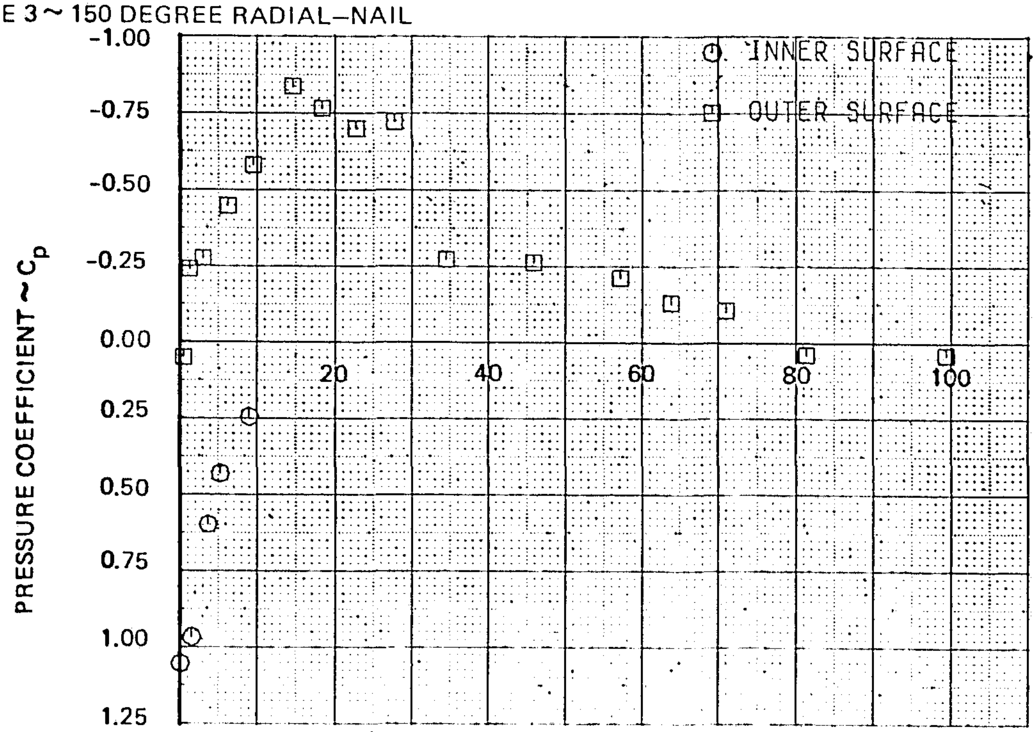
125209-217

Figure B-4. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)

• ENGINE 3 ~ 090 DEGREE RADIAL–NAIL



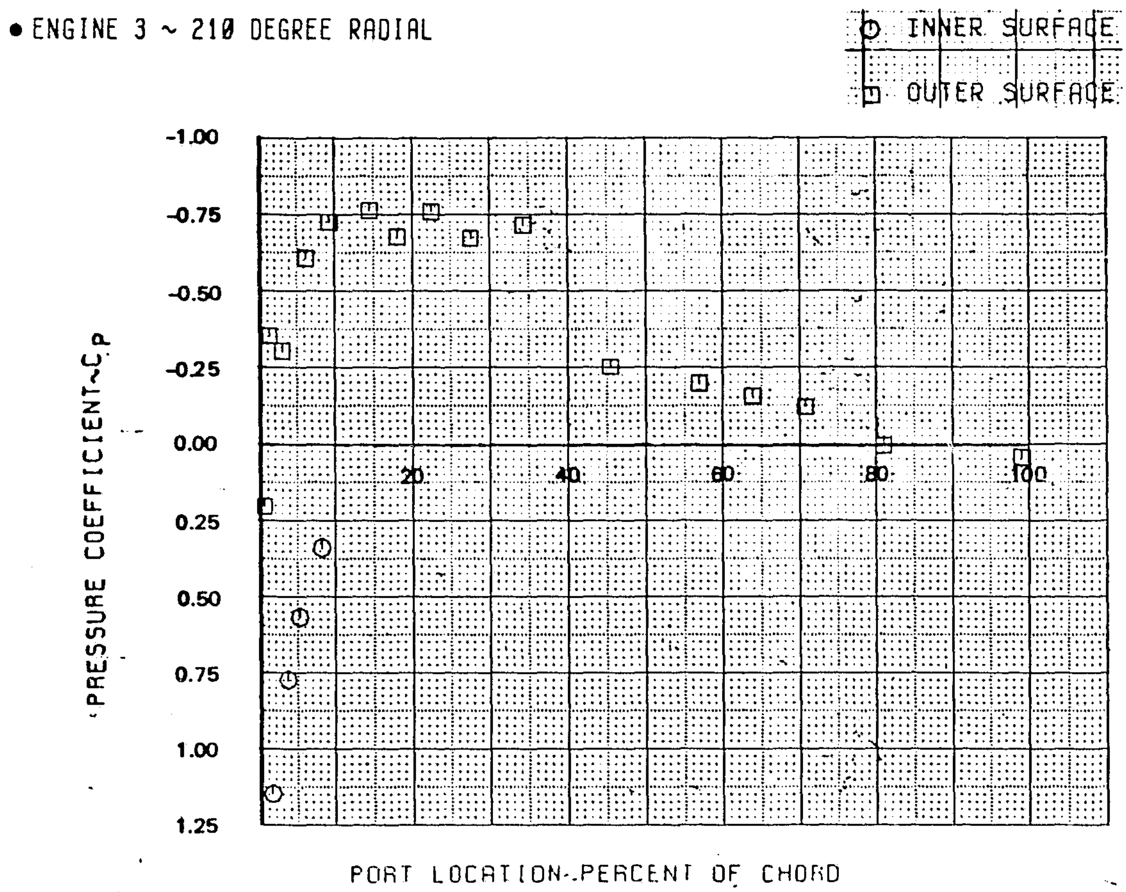
• ENGINE 3 ~ 150 DEGREE RADIAL–NAIL



H_P	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
Vc	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

125209-218

Figure B-4. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)

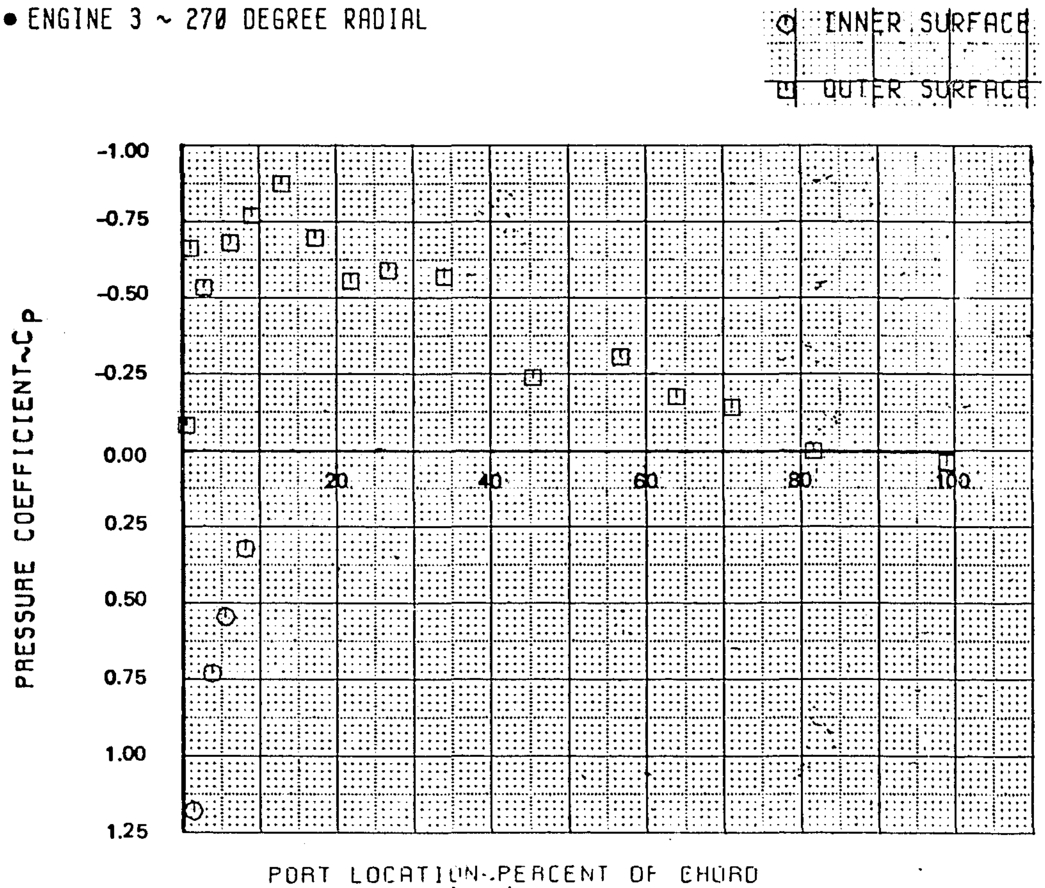


H_P	= 11 909m (39 073 ft)	M	= 0.864
GW	= 219 686 kg (484 325 lbm)	α	= 1.9 deg
Q	= 10.239 kPa (1.485 PSI)	FLAPS = 0 deg	
Vc	= 499.7 km/h (269.8 KTS)	LANDING GEAR UP	

125209-219

Figure B-4. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)

• ENGINE 3 ~ 270 DEGREE RADIAL

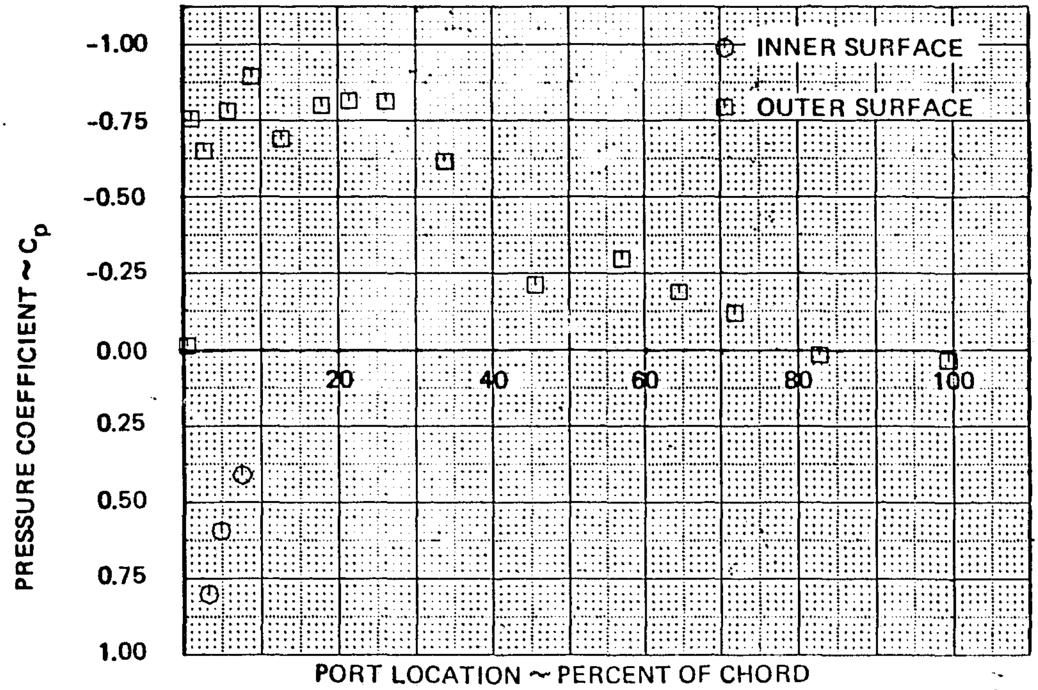


126209-219A

H_P	-	11 909m (39 073 ft)	M	-	0.864
GW	-	219 686 kg (484 325 lbm)	α	-	1.9 deg
Q	-	10.239 kPa (1.485 PSI)	FLAPS - 0 deg		
Vc	-	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

Figure B-4. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)

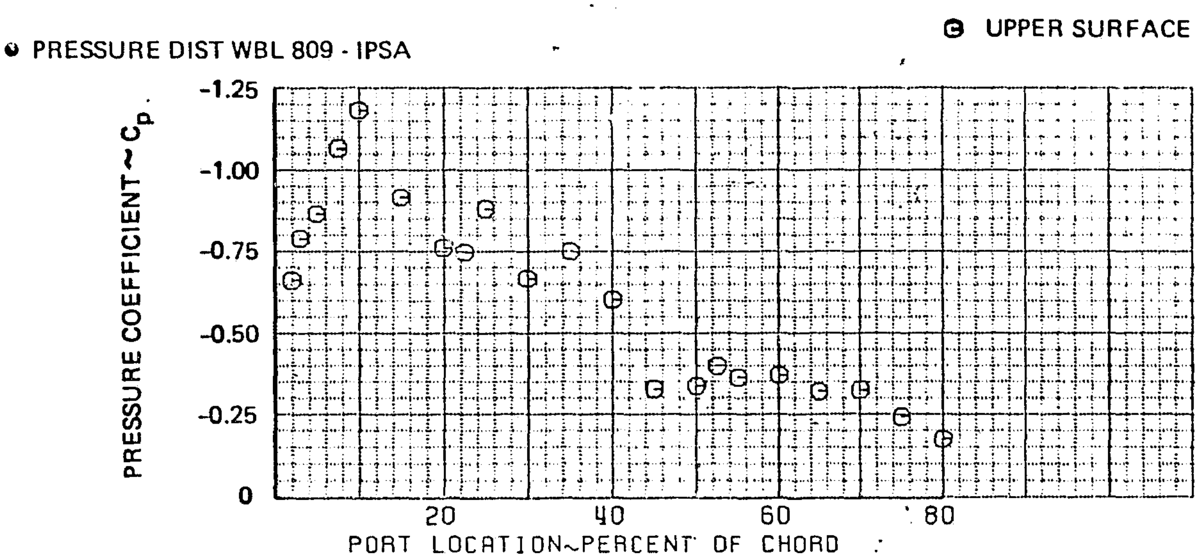
● ENGINE 3 ~ 330 DEGREE RADIAL–NAIL

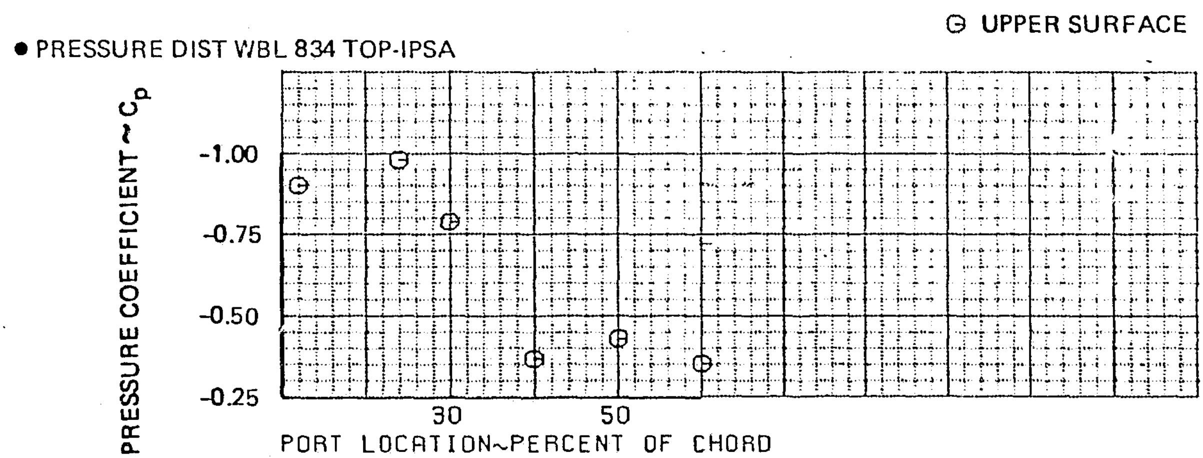


H_P	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
Vc	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

125209-220

Figure B-4. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)

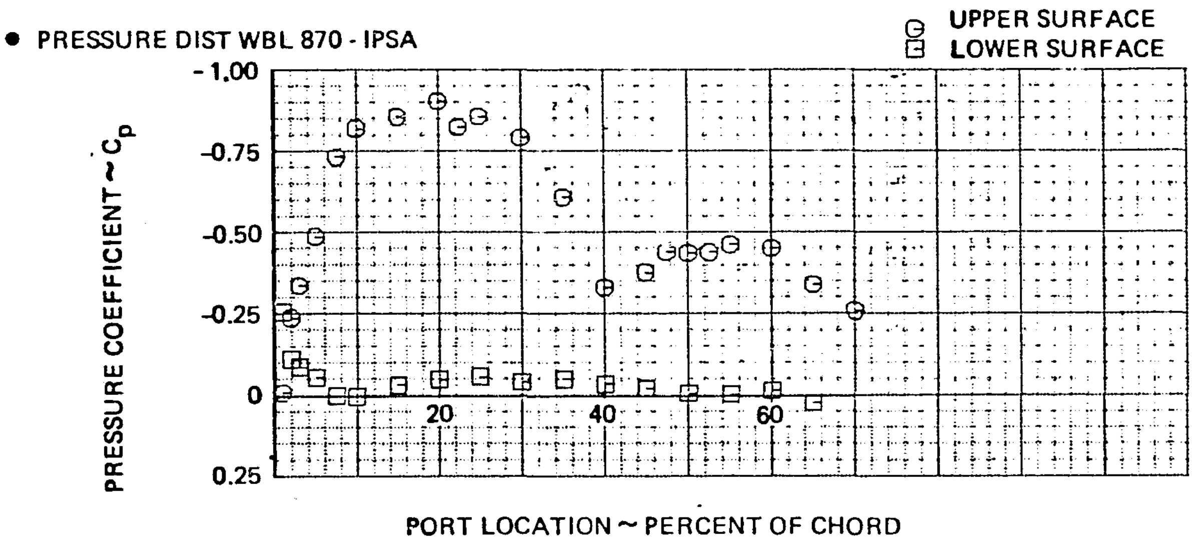


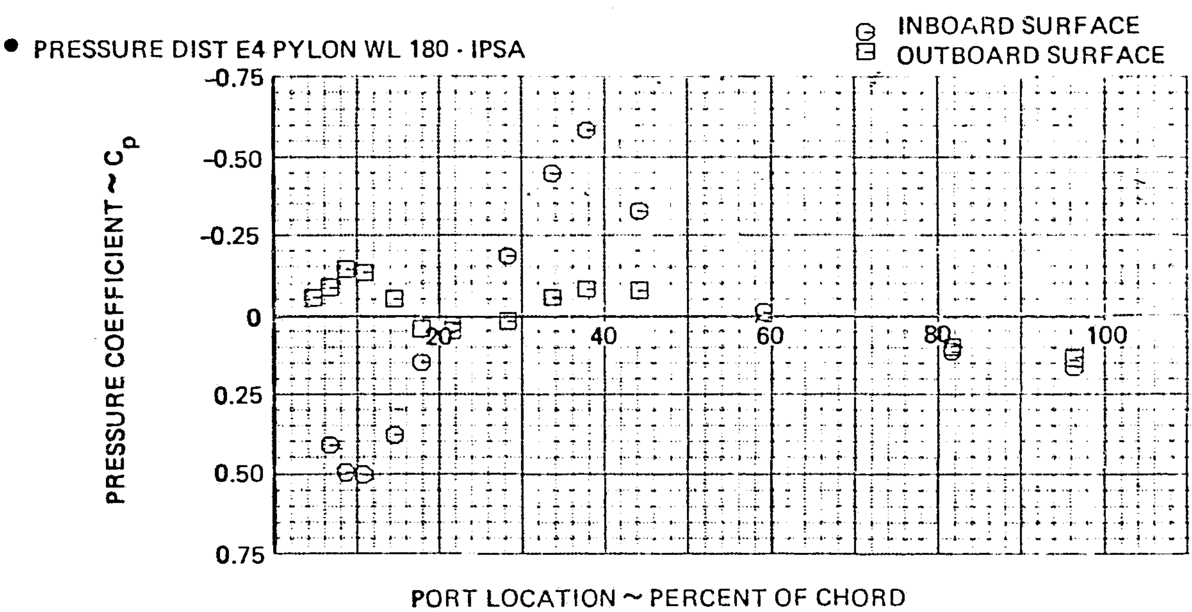


H_P	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
Vc	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

125209-221

Figure B-4. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)

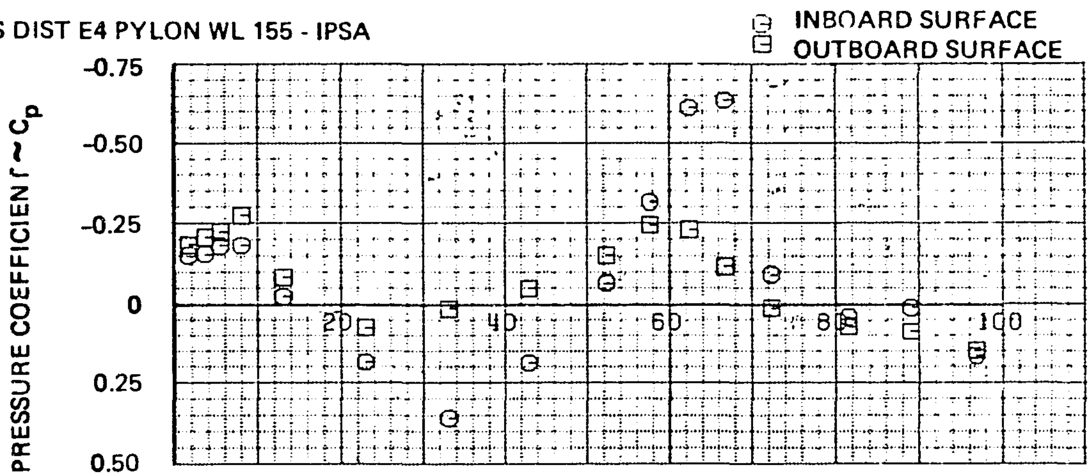


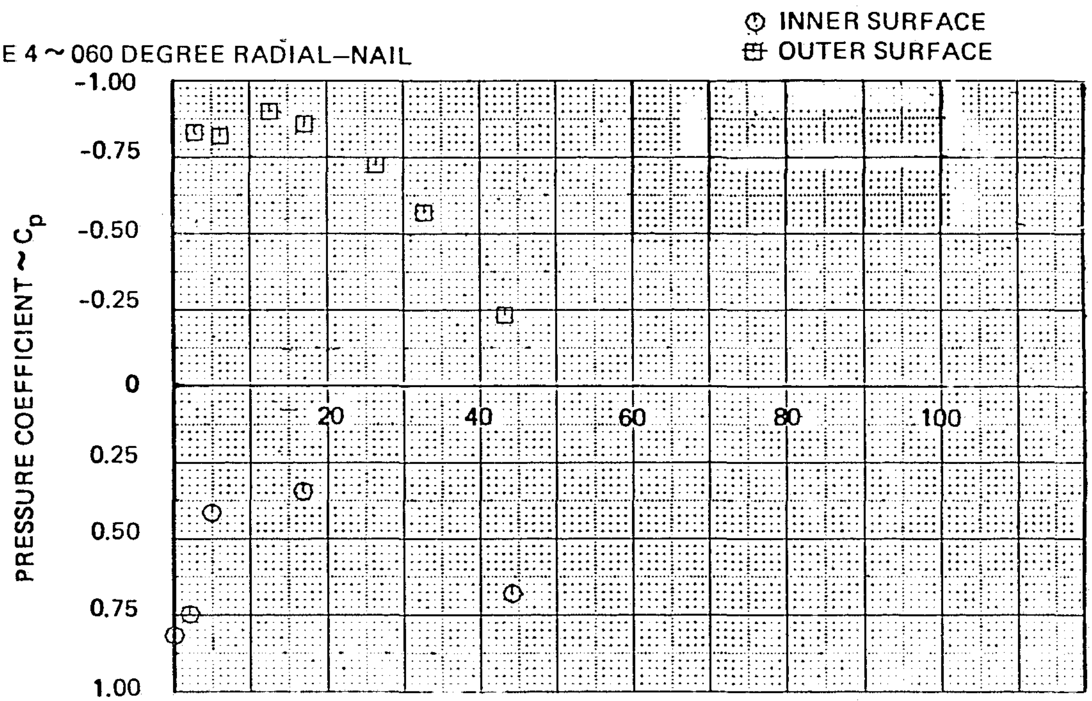


125209-222

H_P	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
Vc	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

Figure B-4. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)



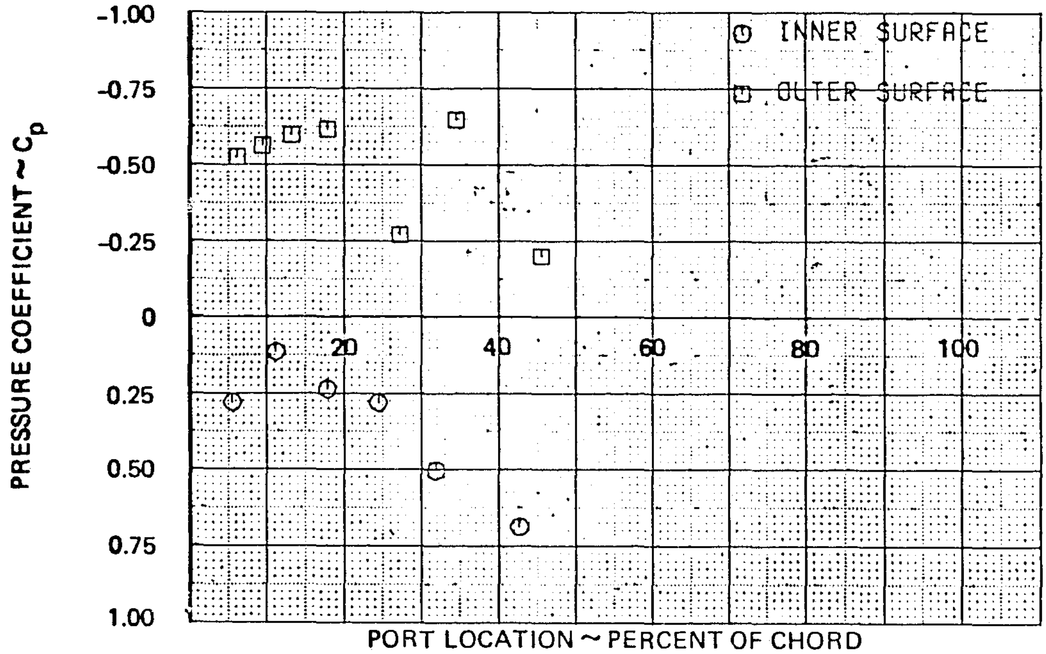


H_P	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
Vc	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

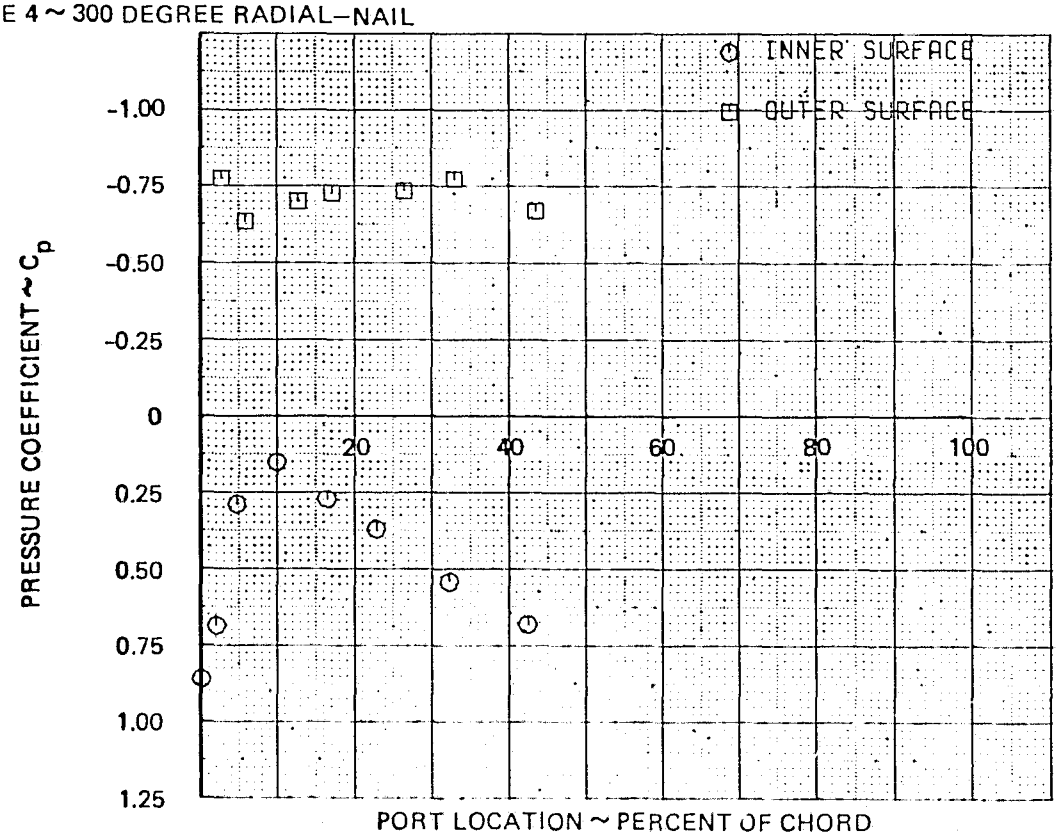
125209-223

Figure B-4. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)

• ENGINE 4 ~ 180 DEGREE RADIAL–NAIL



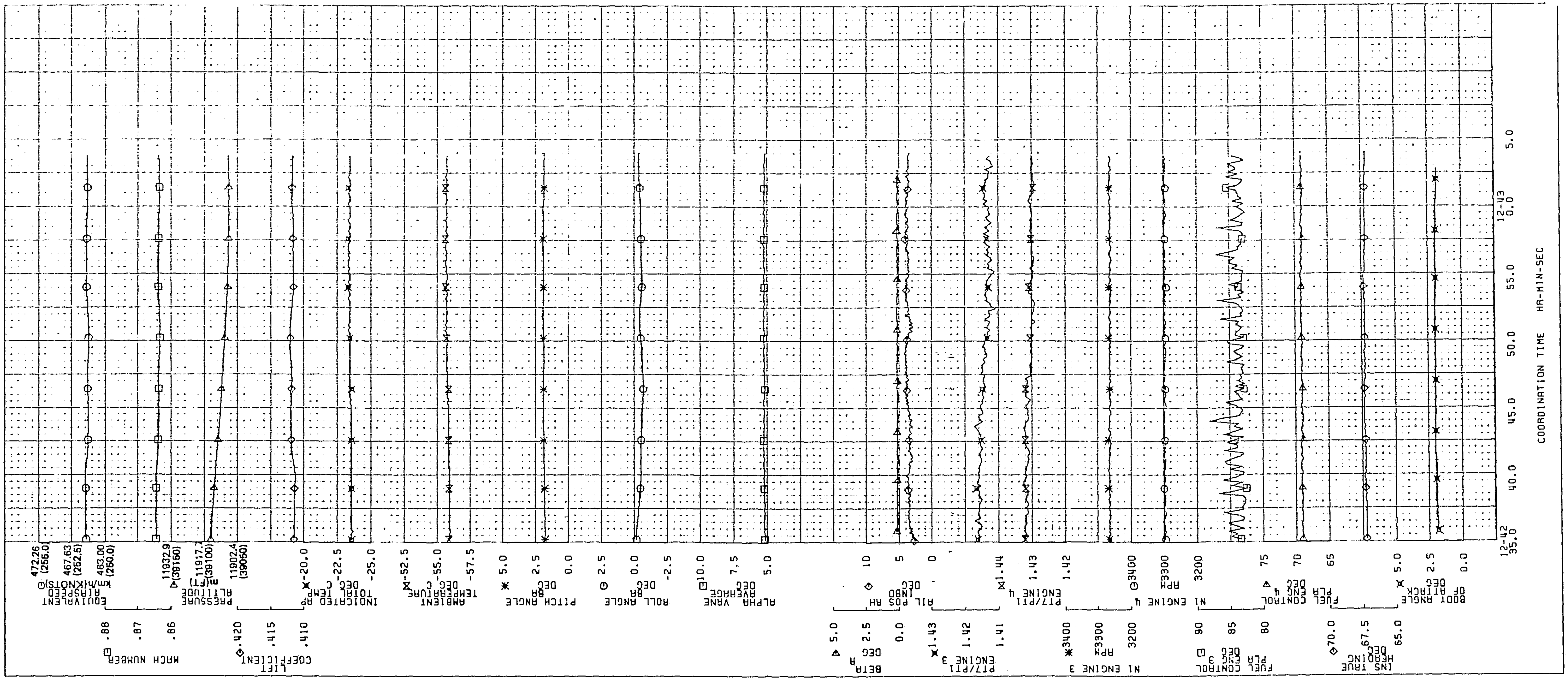
• ENGINE 4 ~ 300 DEGREE RADIAL–NAIL



H_P	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
Vc	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

125209-224

Figure B-4. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)

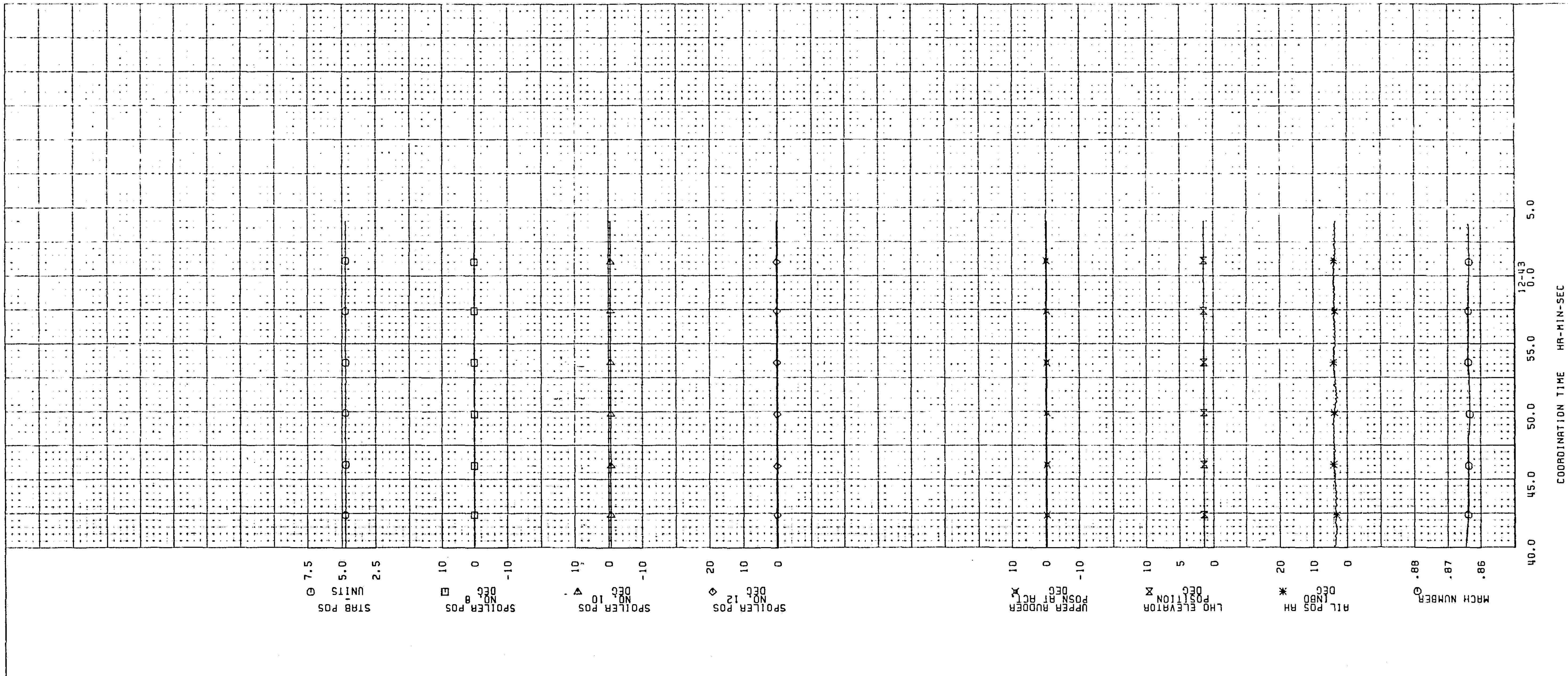


• CONDITION STABILITY

Hp	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
Vc	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

Figure B-4. Pressure Coefficient Data (Test 273-12, Condition 1.00.137.001.1) (Continued)

125209-225

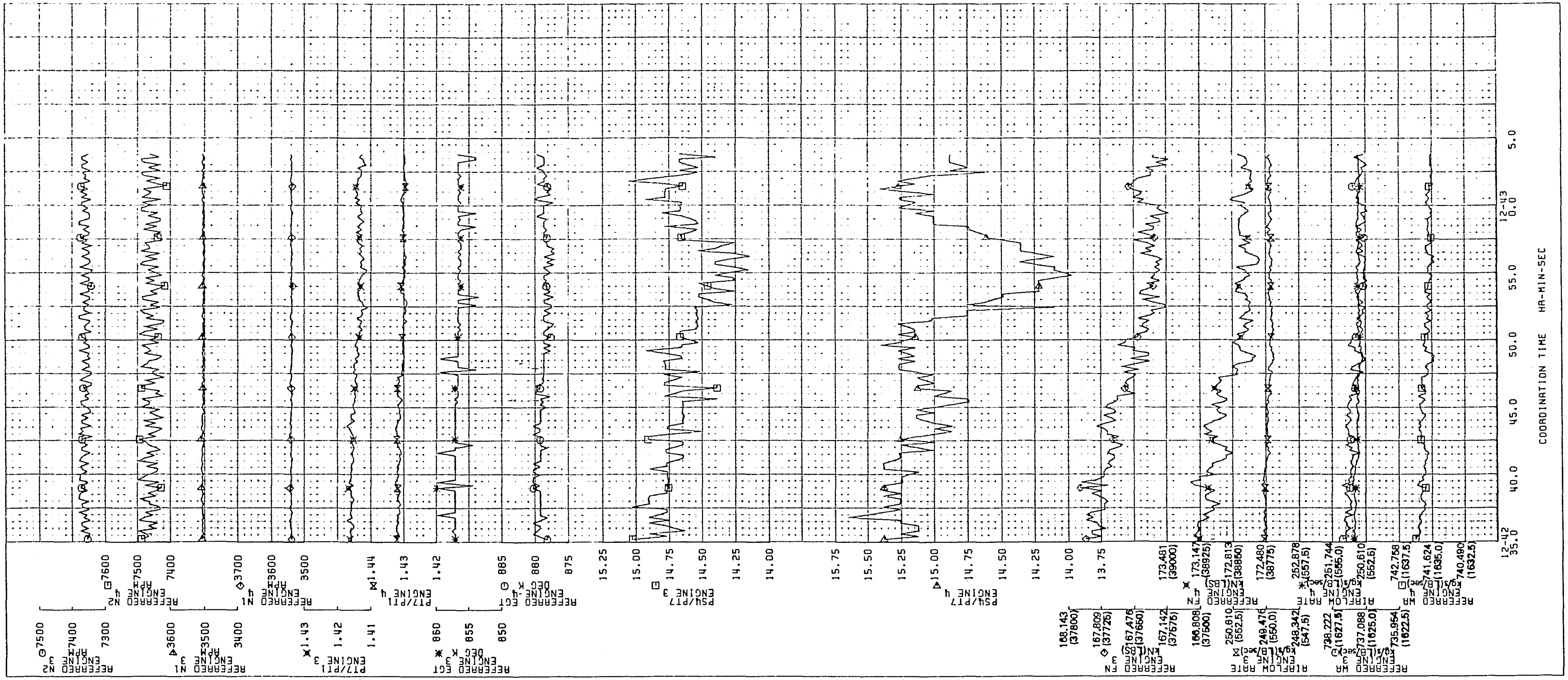


• CONTROL SURFACE POSITION

Hp	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
Vc	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

Figure B-4. Pressure Coefficient Data (Test 273-12, Condition 1.00.137.001.1) (Continued)

125209-226



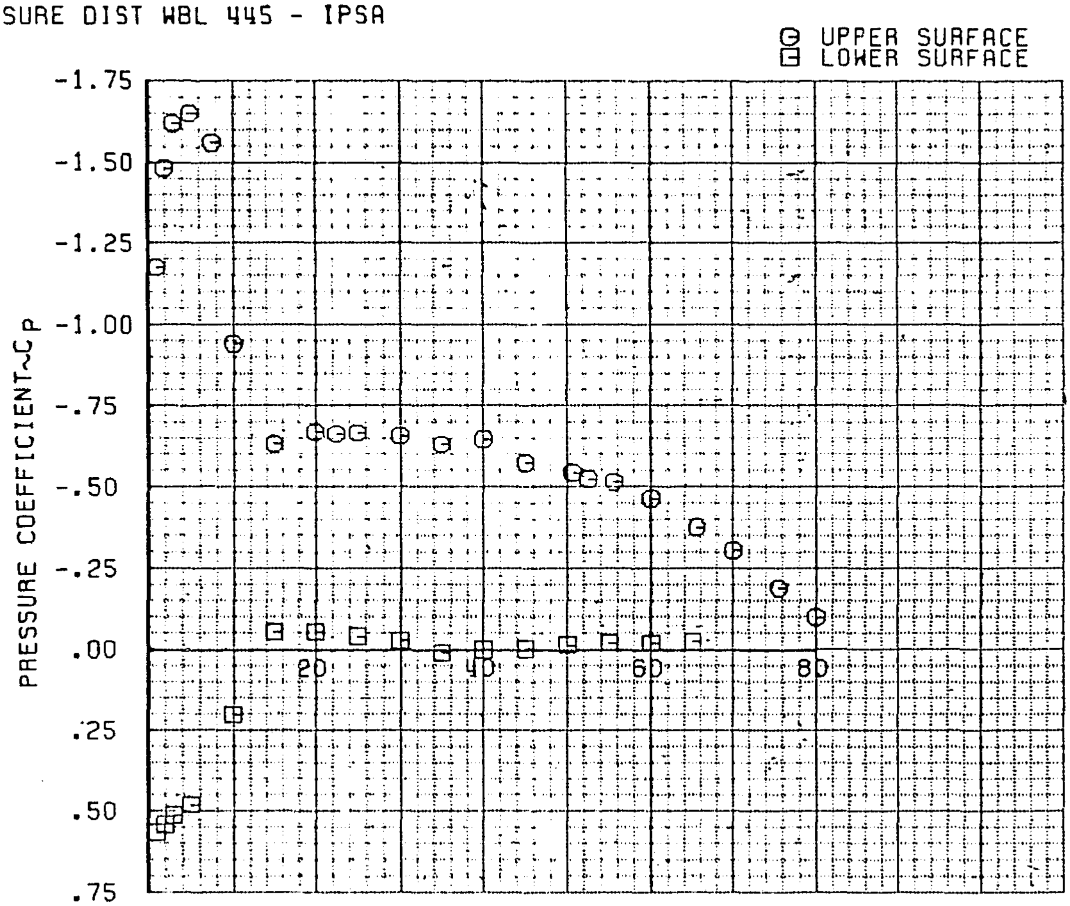
• ENGINE AIRFLOW

Hp	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
Vc	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

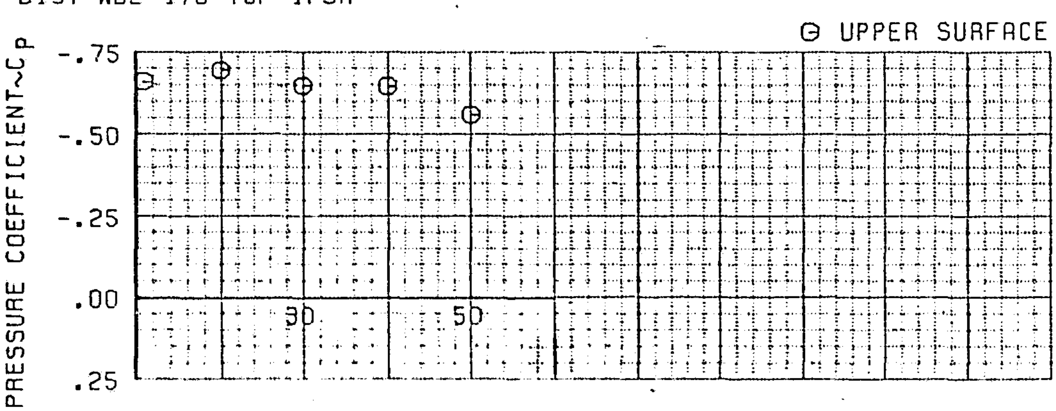
Figure B-4. Pressure Coefficient Data (Test 273-12, Condition 1.00.137.001.1) (Concluded)

125209-227

● PRESSURE DIST WBL 445 - IPSA



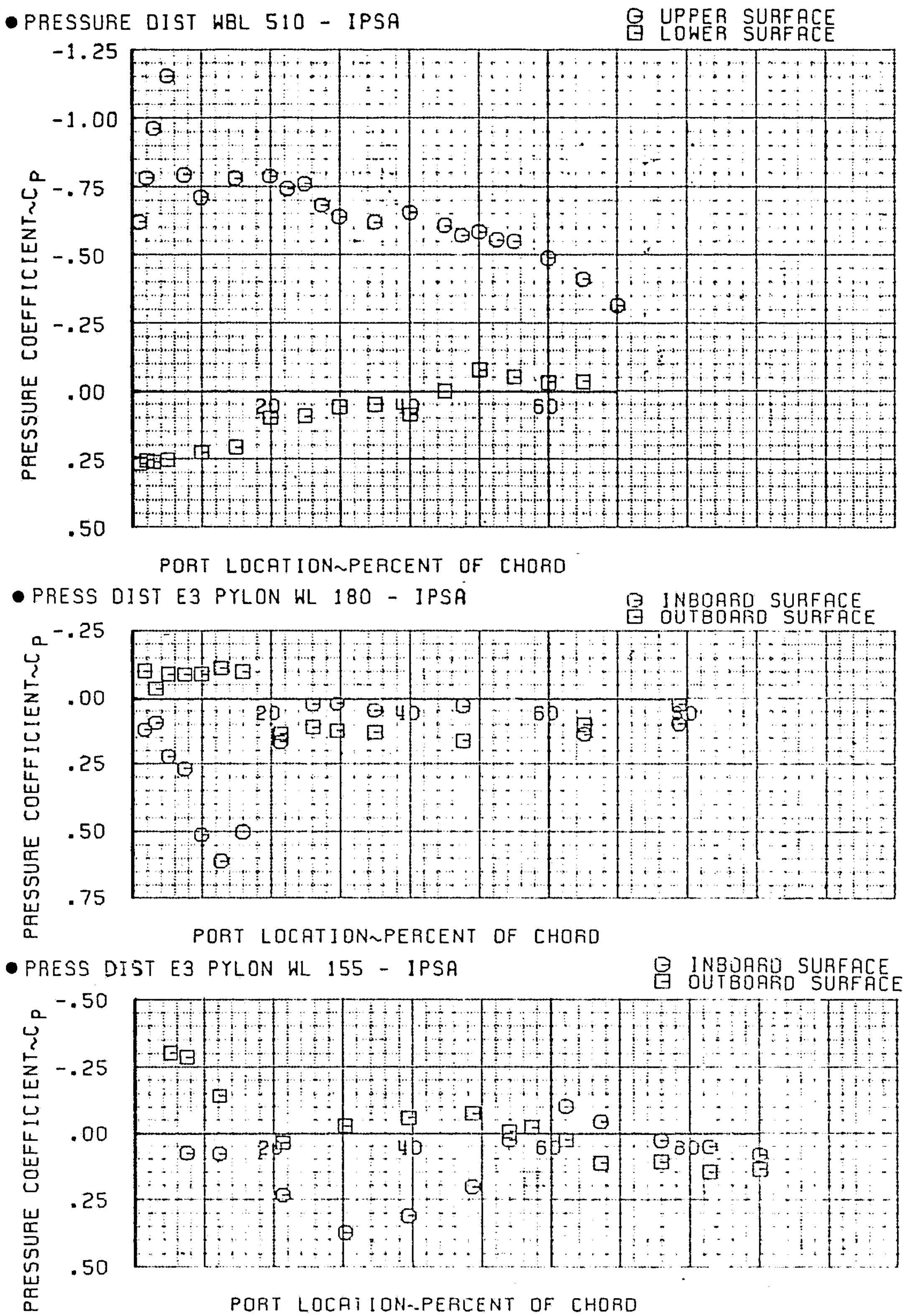
● PRESS DIST WBL 470 TOP-IPSA



H_p = 12 029 m (39 466 ft)		M = 0.762	
GW = 216 516 kg (477 337 lbm)		α = 3.6 deg	
Q' = 7.826 kPa (1.135 PSI)		FLAPS = 0 deg	
Vc = 430.4 km/h (232.4 KTS)		LANDING GEAR UP	

125209-228

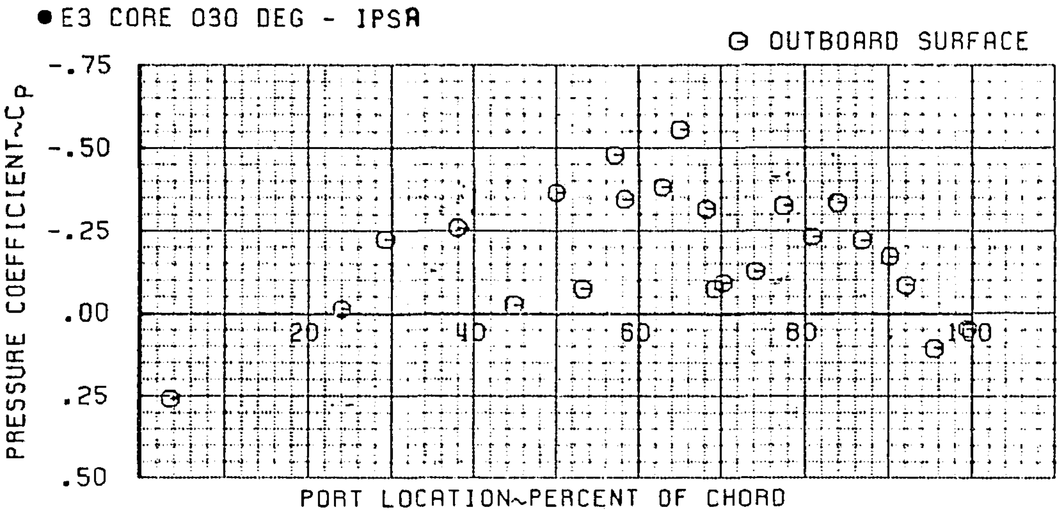
Figure B-5. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.002)

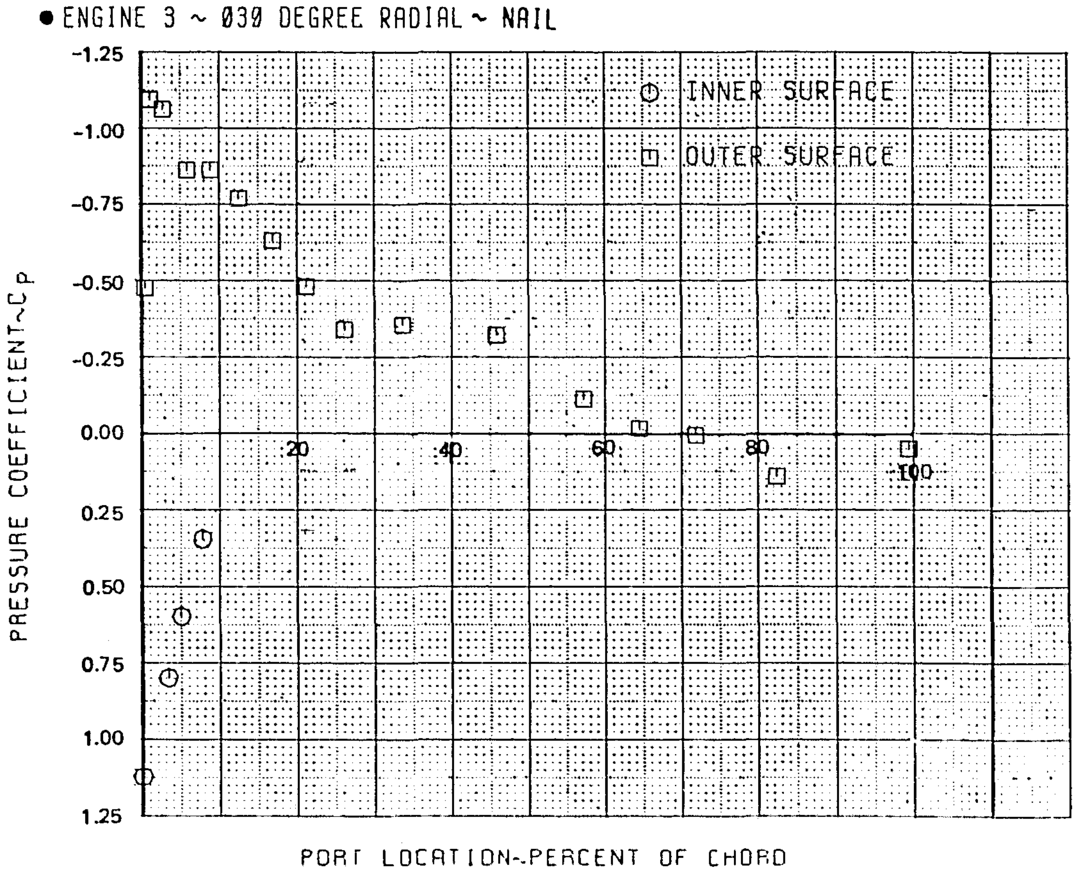


H_p	=	12 029m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	FLAPS = 0 deg		
Vc	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

125209-229

Figure B-5. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.002)(Continued)



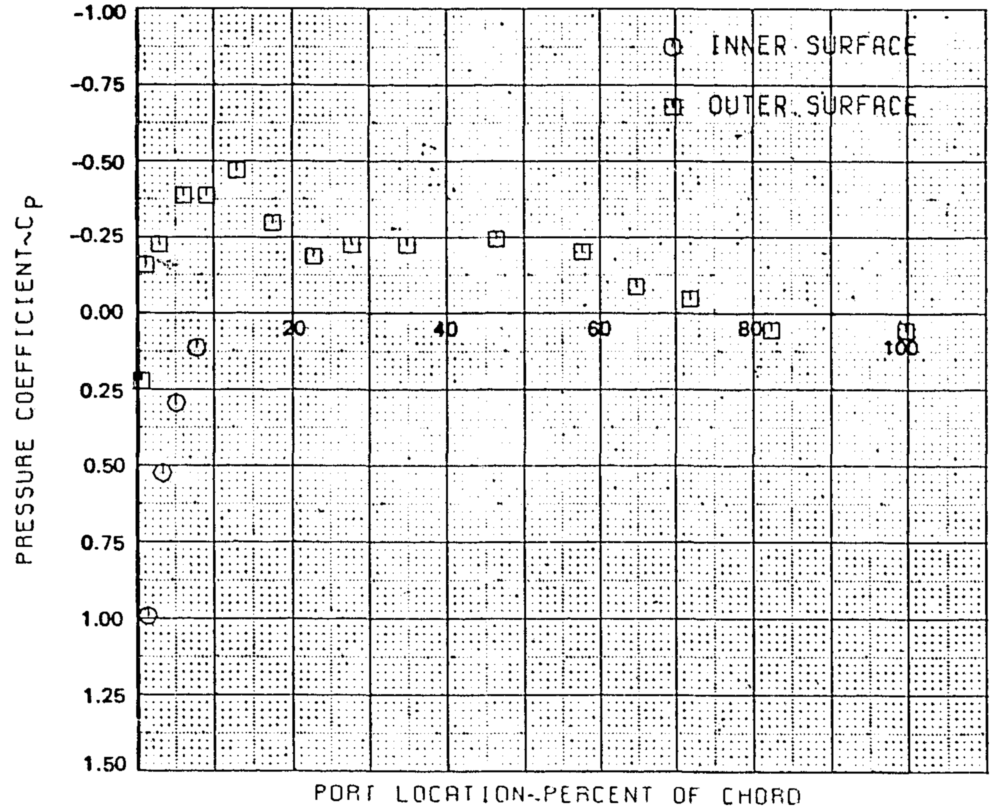


H_p	=	12 209m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	FLAPS = 0 deg		
Vc	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

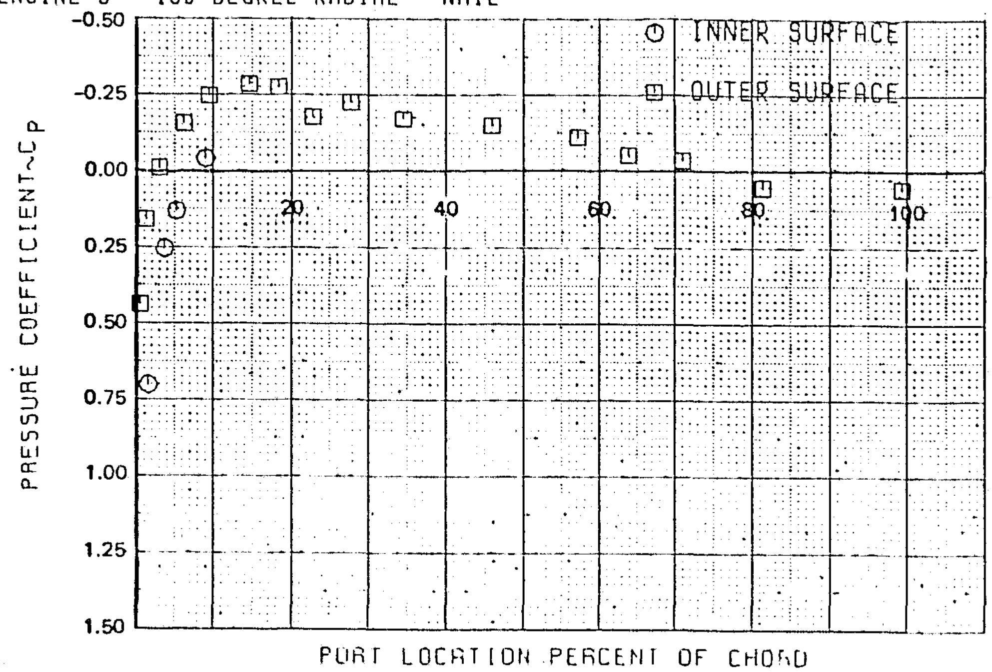
125209-230

Figure B-5. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.002)(Continued)

●ENGINE 3 ~ 090 DEGREE RADIAL ~ NAIL



●ENGINE 3 ~ 150 DEGREE RADIAL ~ NAIL

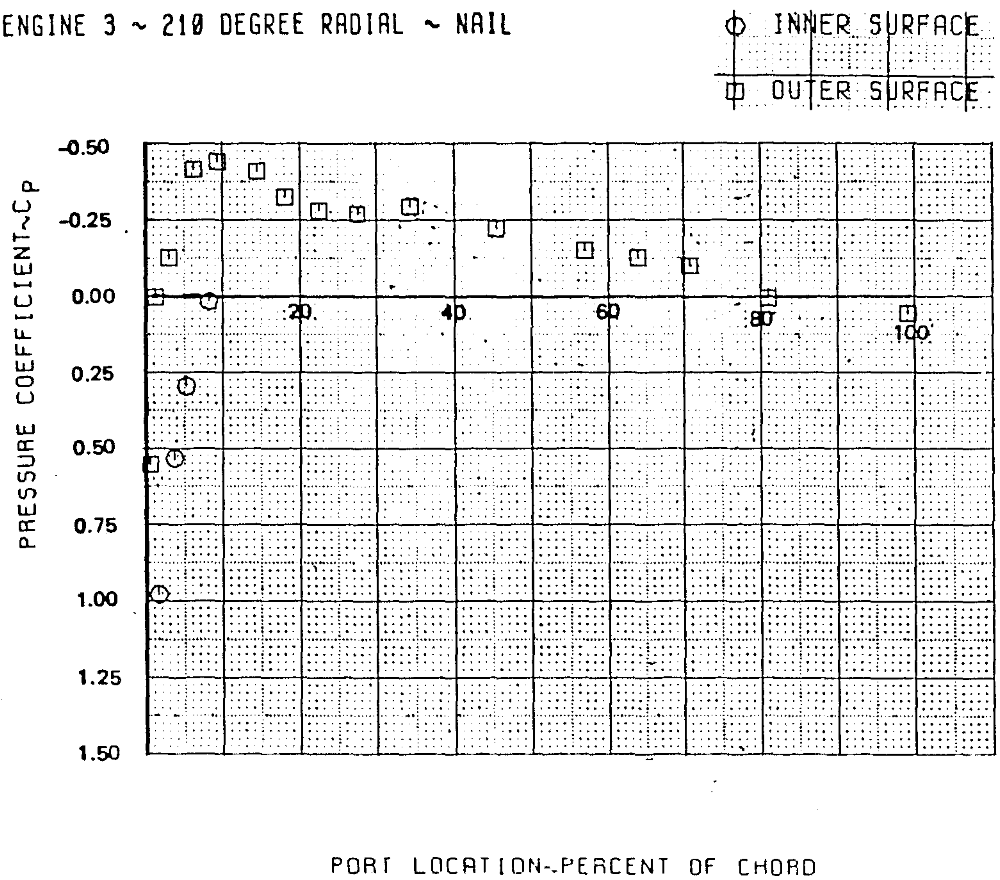


H_p	=	12 029m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	FLAPS = 0 deg		
Vc	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

125209-231

Figure B-5. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.002)(Continued)

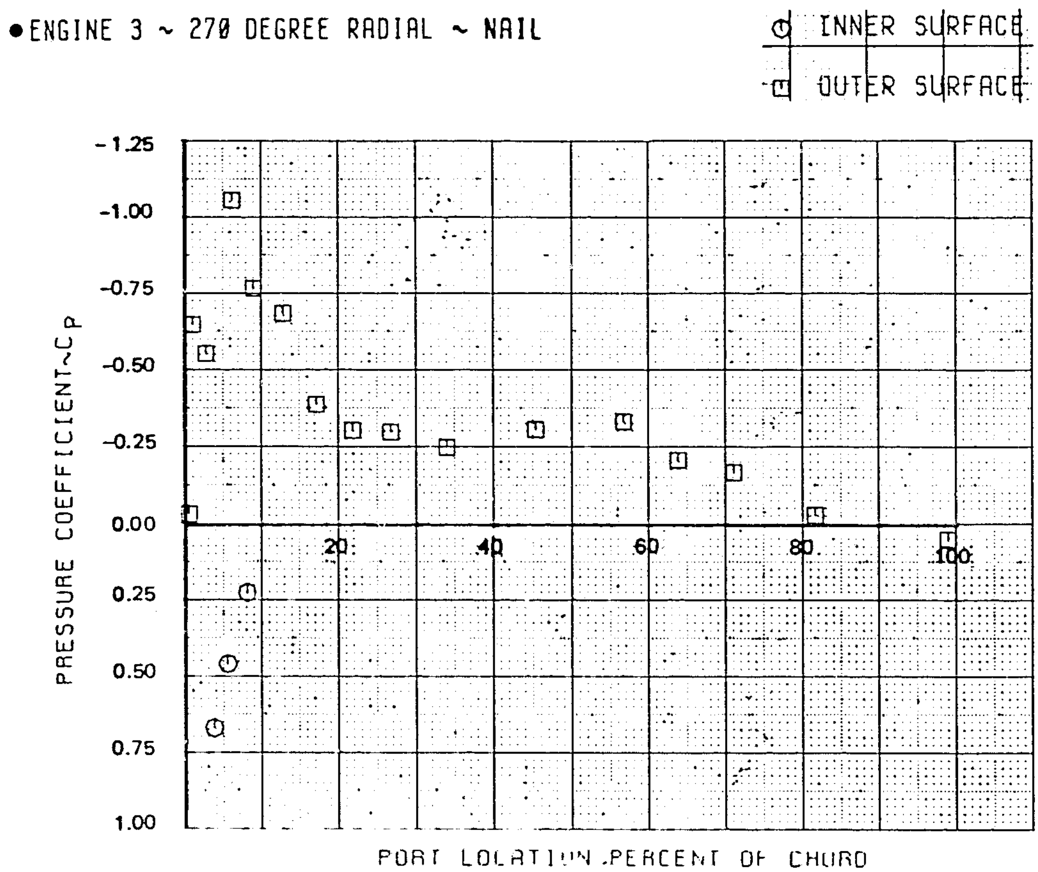
● ENGINE 3 ~ 210 DEGREE RADIAL ~ NAIL



Hp	=	12 029m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	FLAPS = 0 deg		
Vc	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

125209-232

Figure B-5. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.002)(Continued)

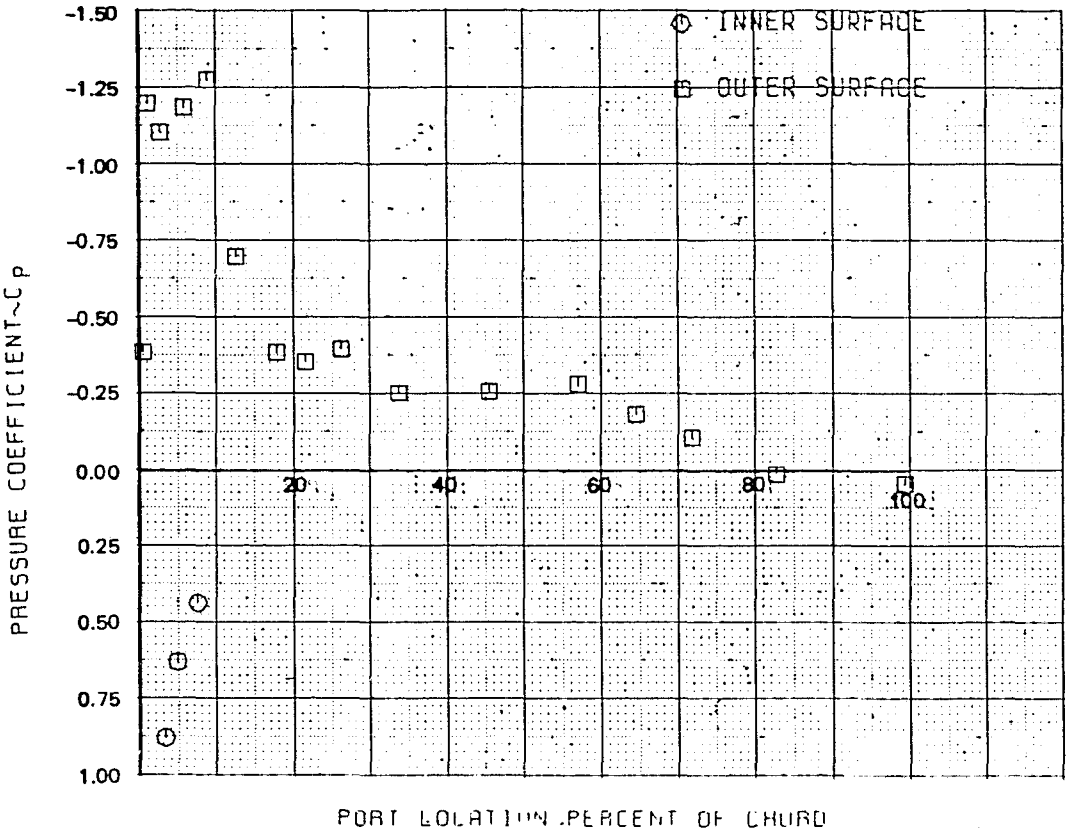


Hp	=	12 029m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	FLAPS = 0 deg		
Vc	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

125209-232A

Figure B 5. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.002)(Continued)

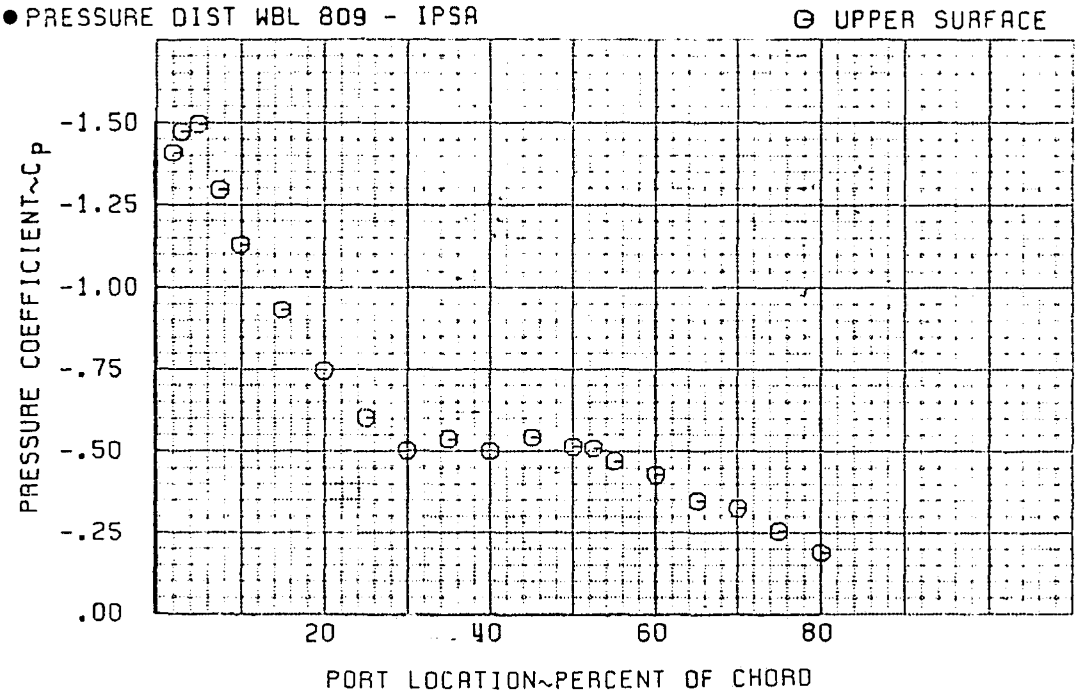
● ENGINE 3 ~ 330.DEGREE RADIAL ~ NAIL

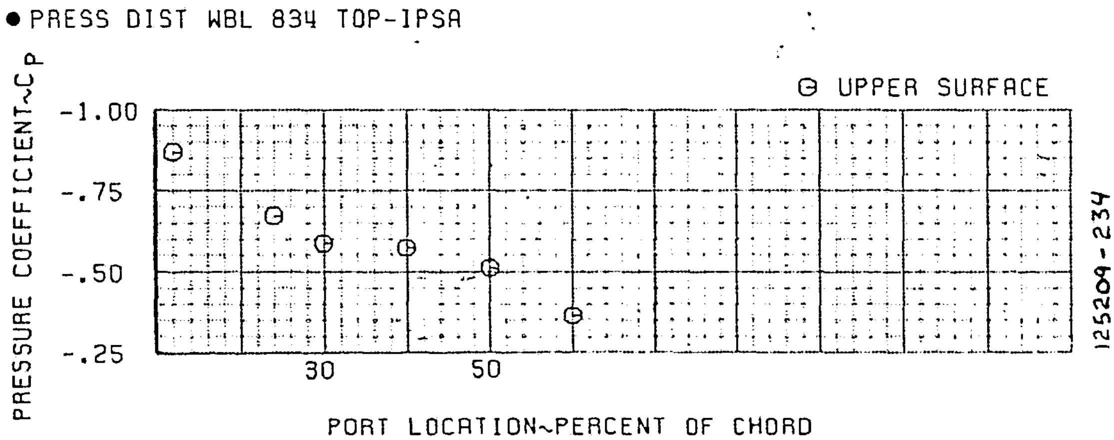


Hp	=	12 209m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	LANDING GEAR UP		
Vc	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

125209-233

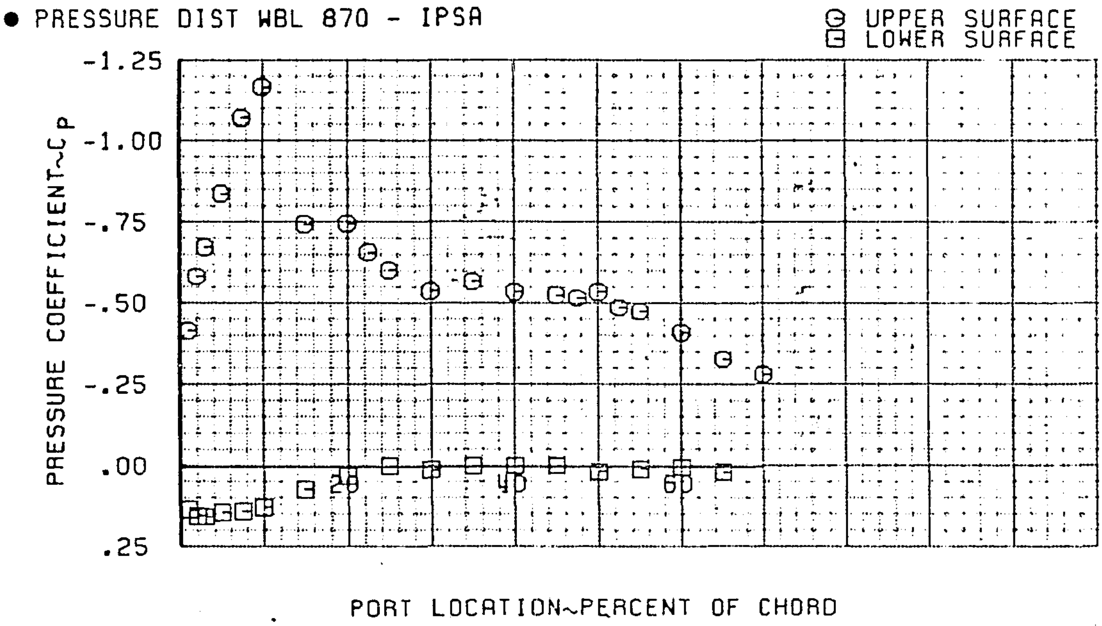
Figure B-5. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.002)(Continued)

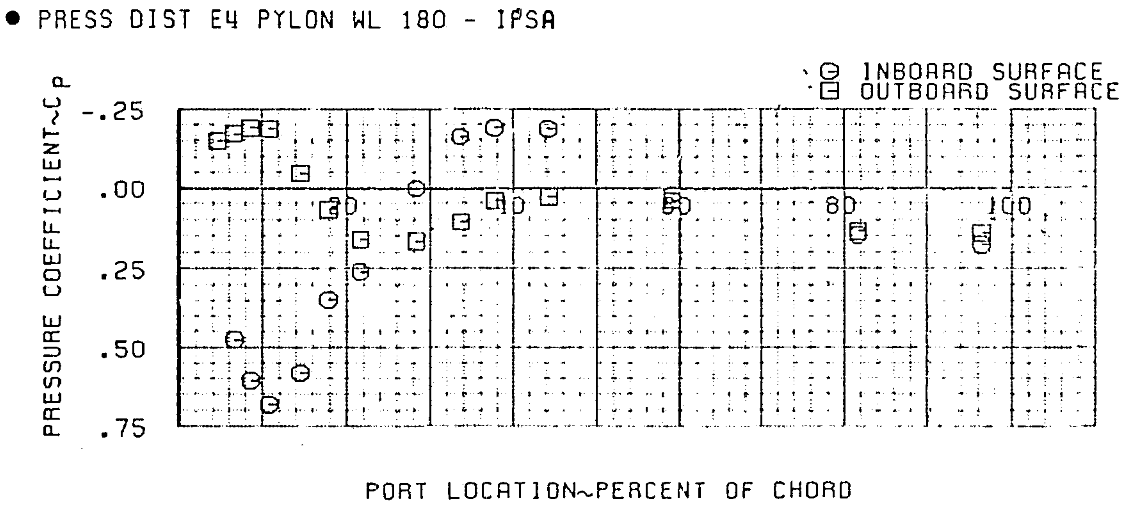




Hp	=	12 029m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	FLAPS = 0 deg		
Vc	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

Figure B-5. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.002)(Continued)

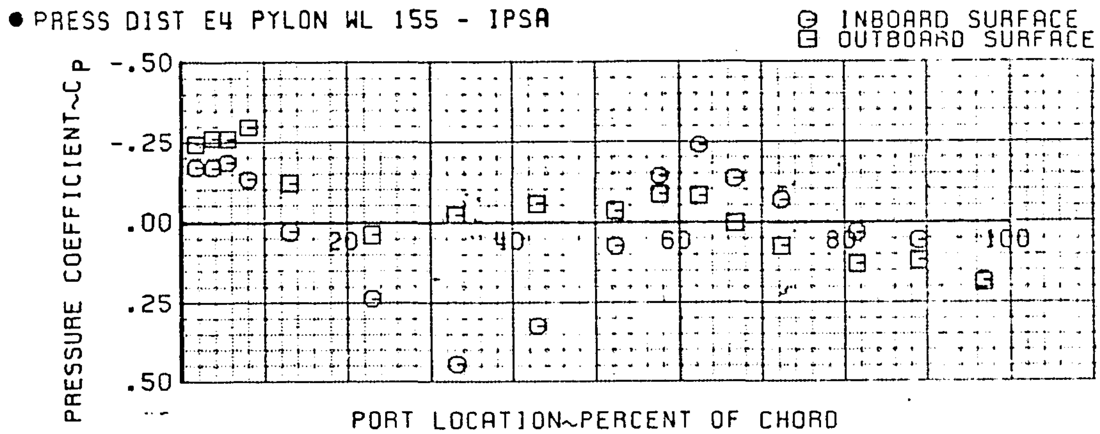


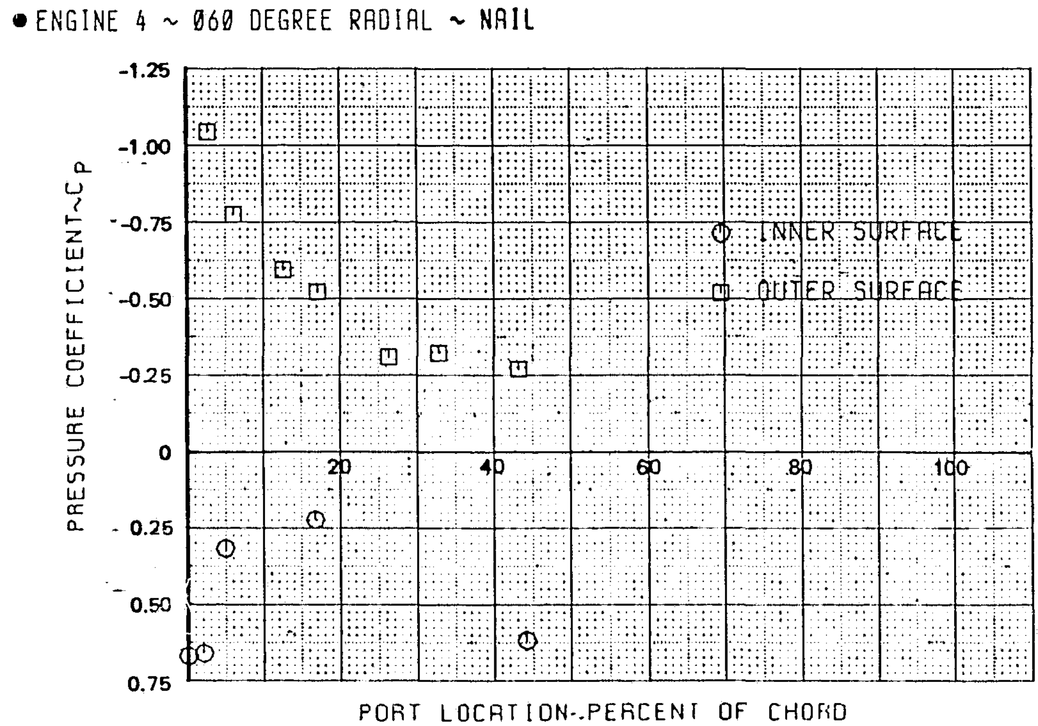


Hp	=	12 029m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	FLAPS = 0 deg		
Vc	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

125209-235

Figure B-5. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.002)(Continued)



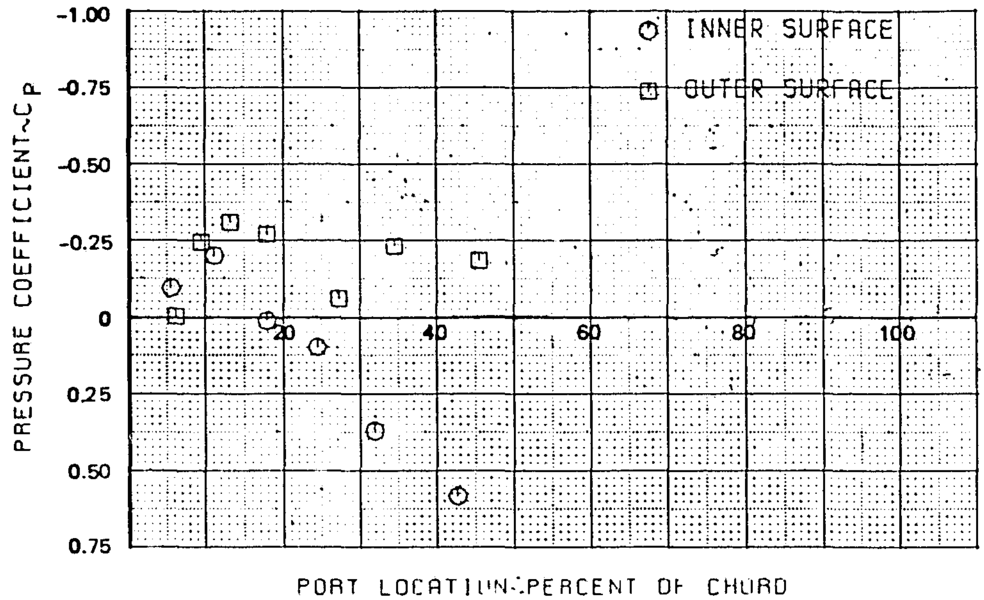


Hp	=	12 029m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	FLAPS = 0 deg		
Vc	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

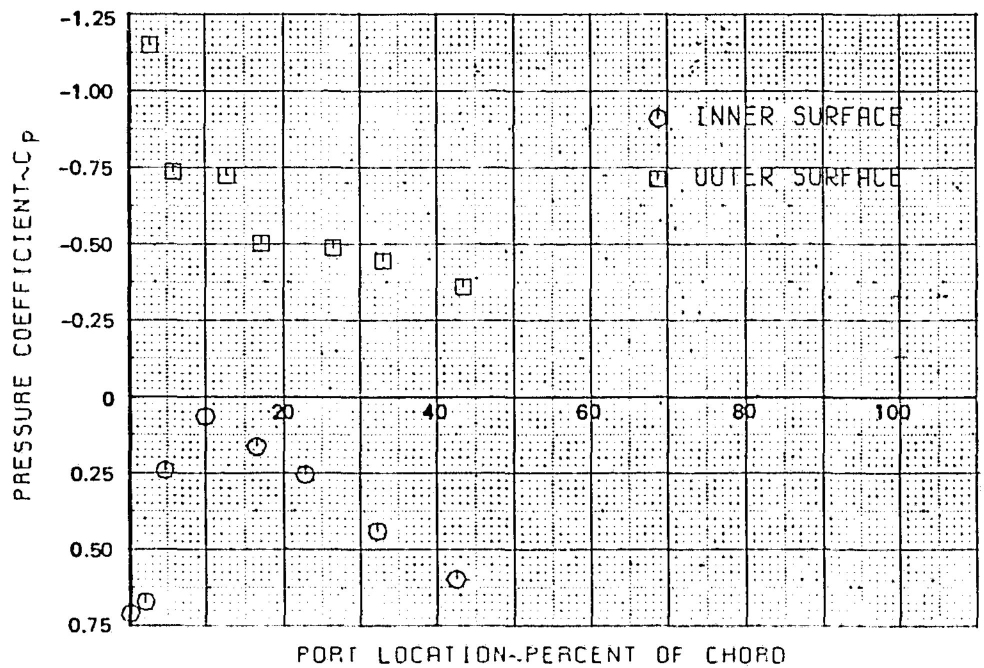
125209-236

Figure B-5. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.002)(Continued)

● ENGINE 4 ~ 180 DEGREE RADIAL ~ NAIL



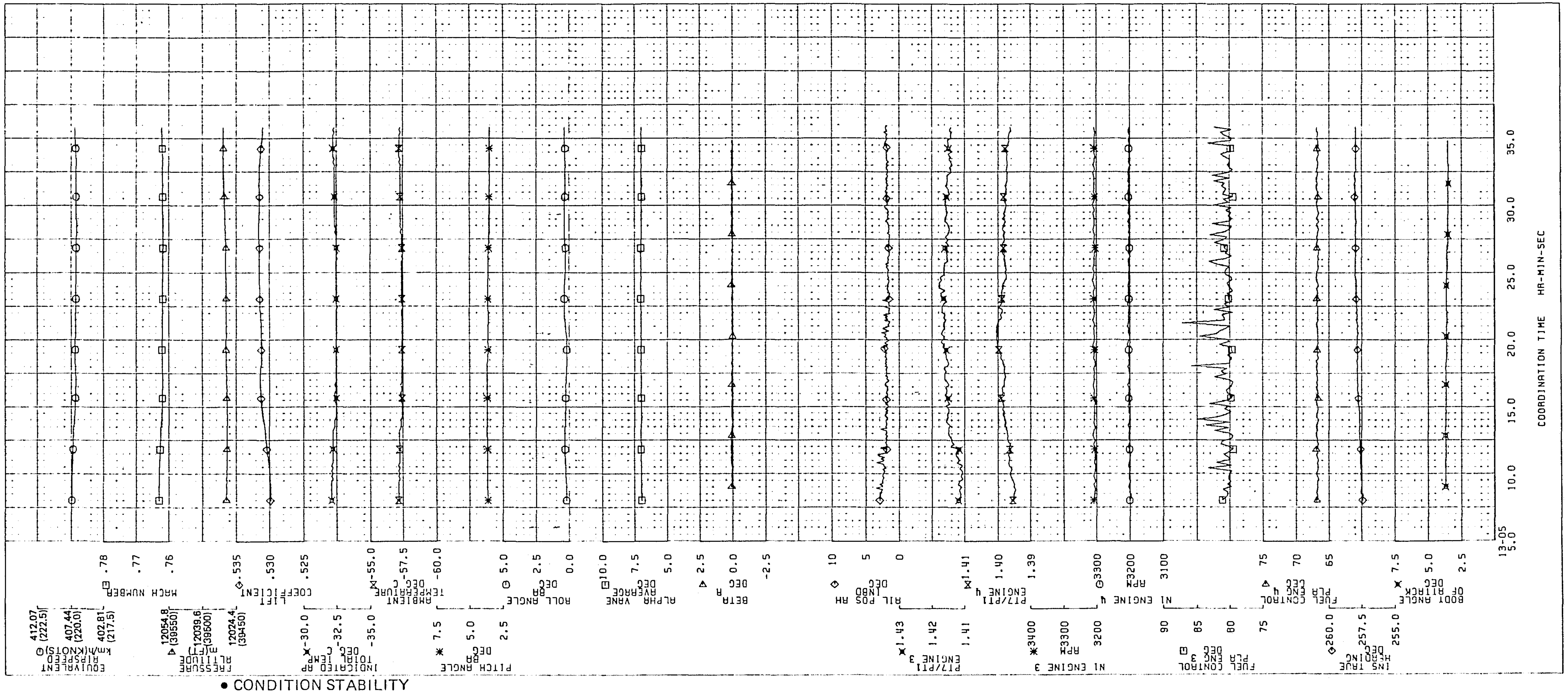
● ENGINE 4 ~ 300 DEGREE RADIAL ~ NAIL



H_p	=	12 029m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	FLAPS = 0 deg		
Vc	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

125209-237

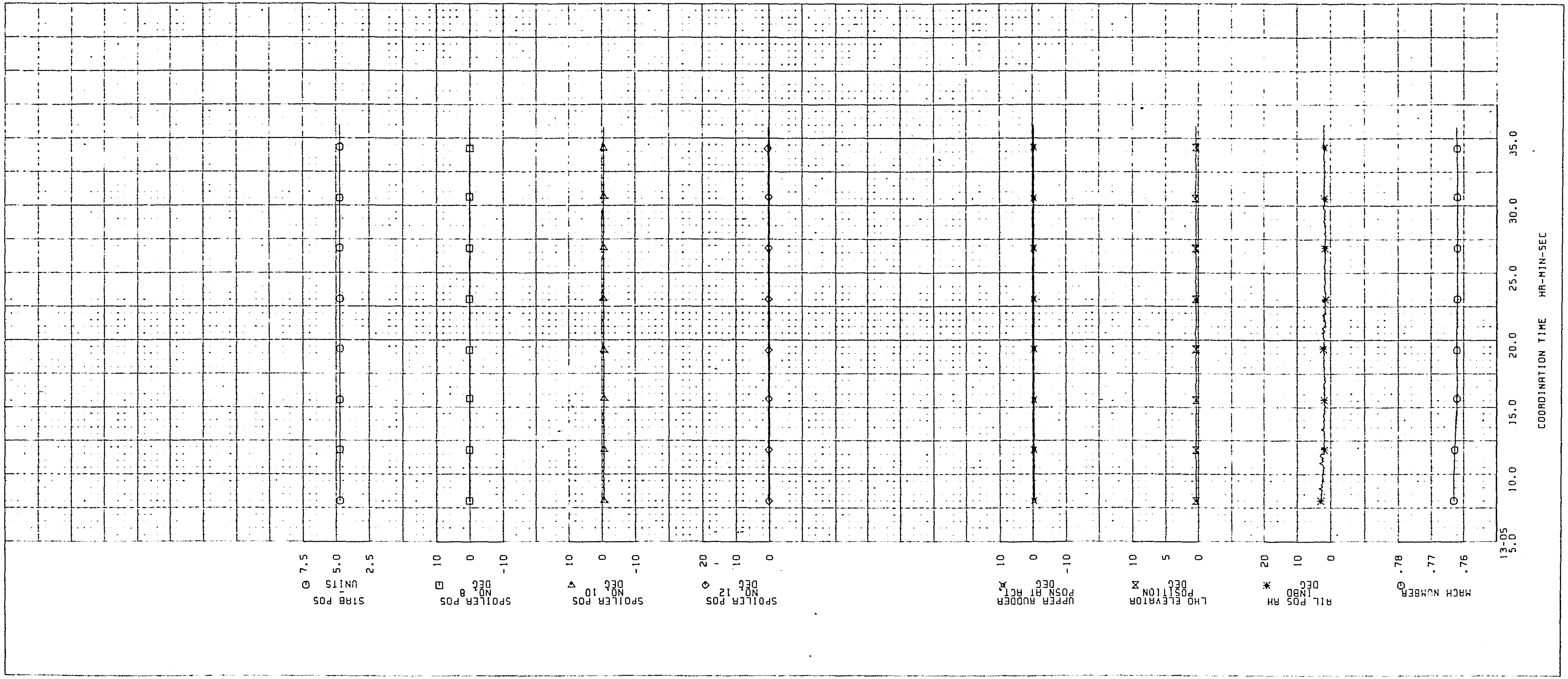
Figure B-5. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.002)(Continued)



Hp = 12 029m (39 466 ft)		M = 0.762	
GW = 216 516 kg (477 337 lbm)		α = 3.6 deg	
Q = 7.826 kPa (1.135 PSI)		FLAPS = 0 deg	
Vc = 430.4 km/h (232.4 KTS)		LANDING GEAR UP	

125209-238

Figure B-5. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.002)(Continued)

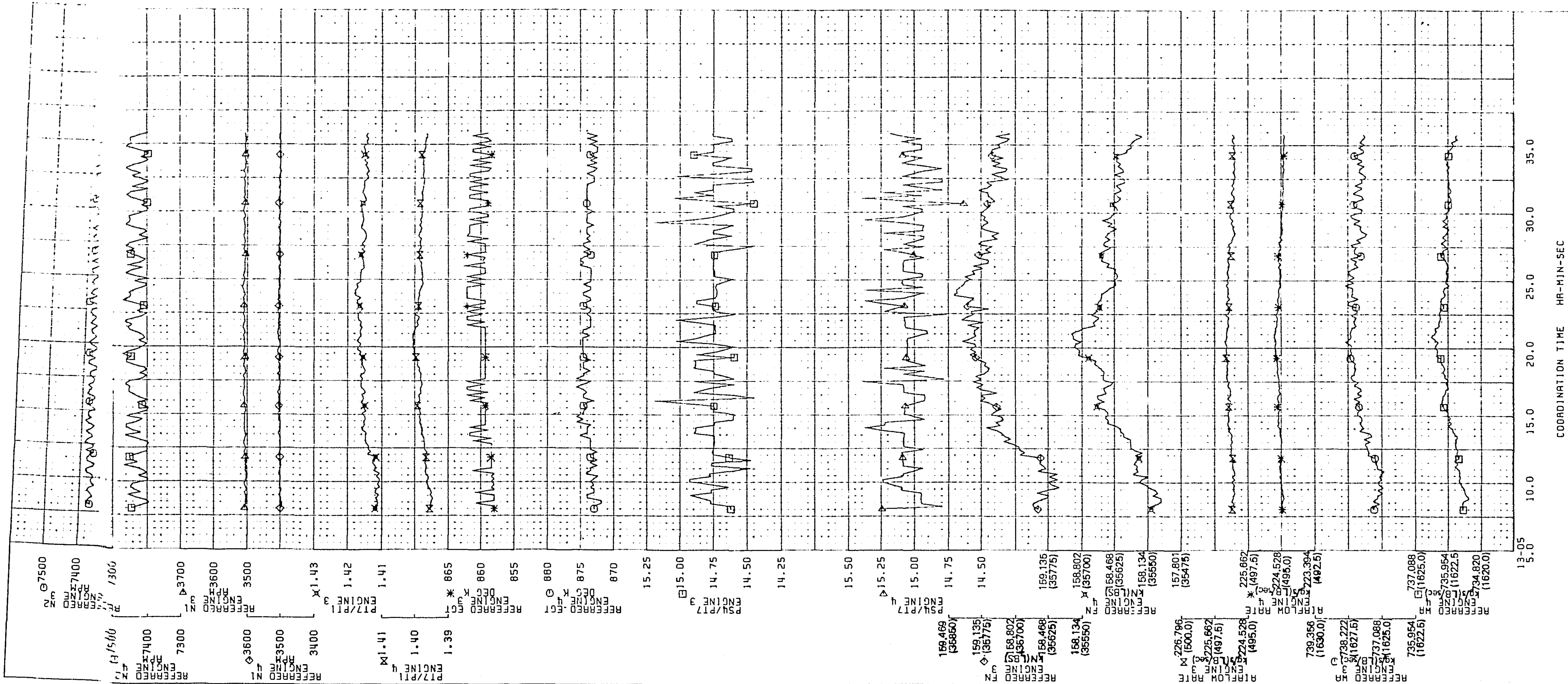


• CONTROL SURFACE POSITION

H_p	=	12 029m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	FLAPS = 0 deg		
Vc	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

125209-240

Figure B-5. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.002)(Continued)

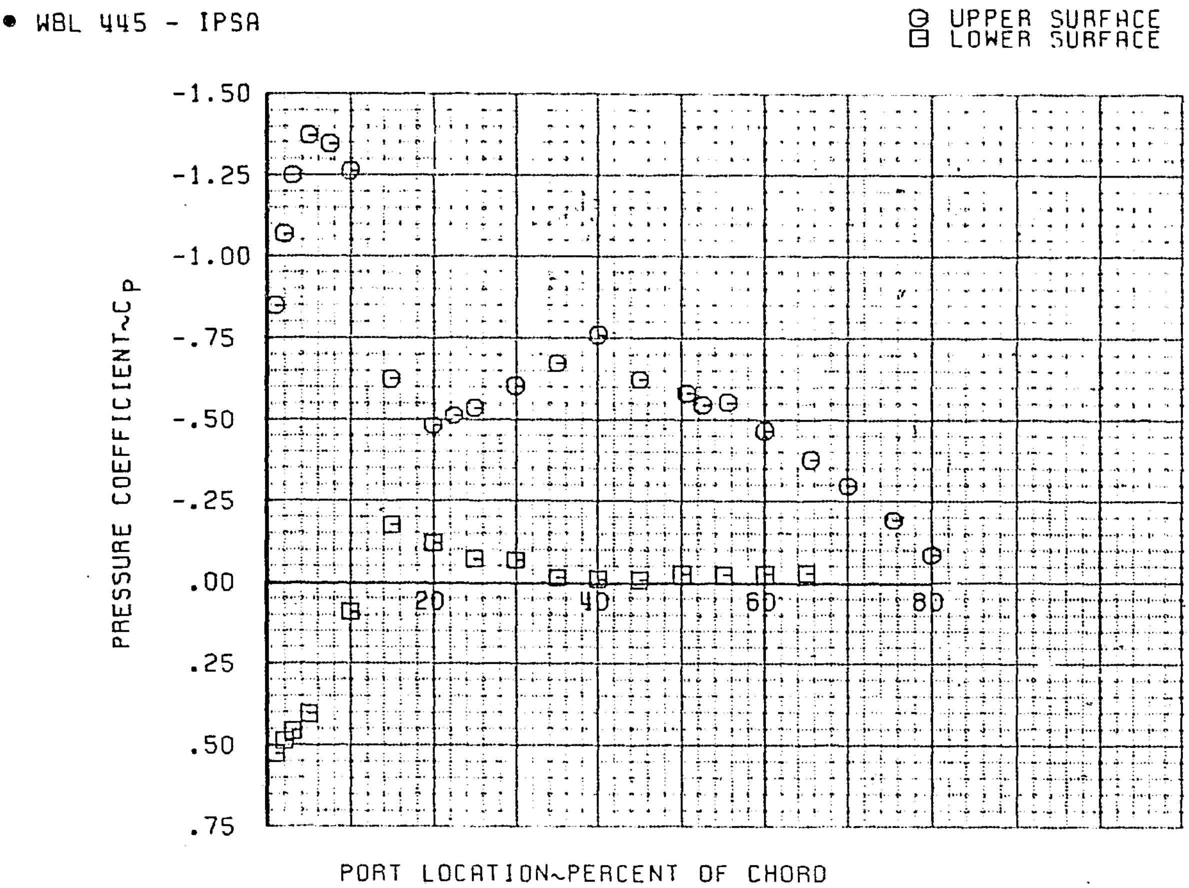


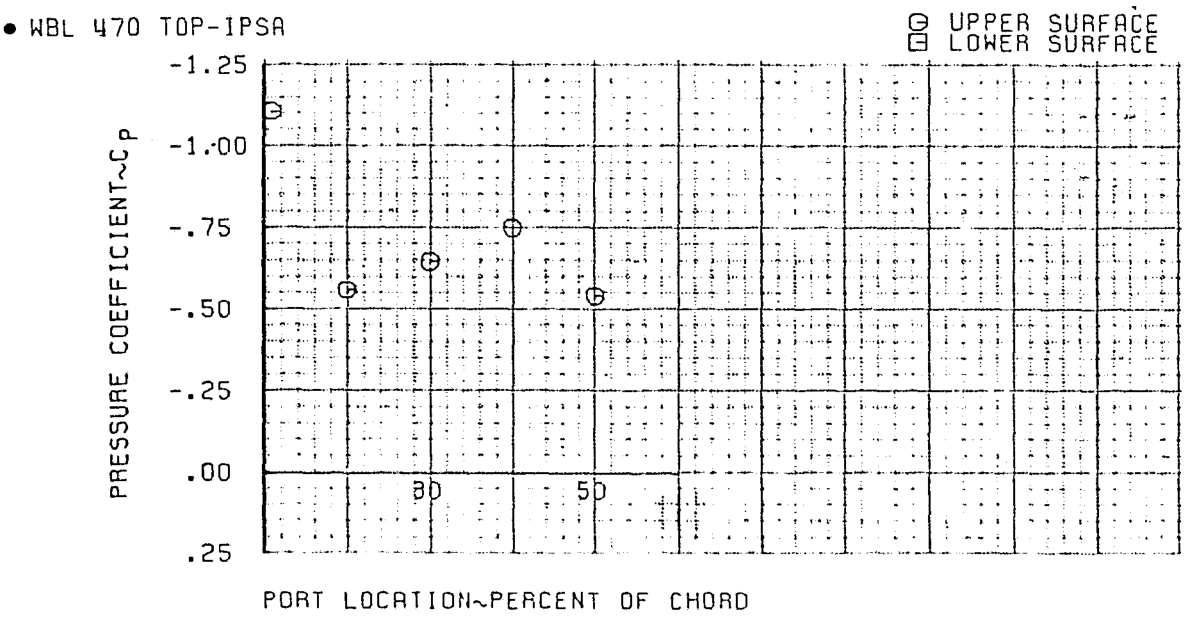
• ENGINE AIRFLOW

Hp	=	12 029m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	FLAPS = 9 deg		
Vc	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

125209-239

Figure B-5. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.002)(Concluded)



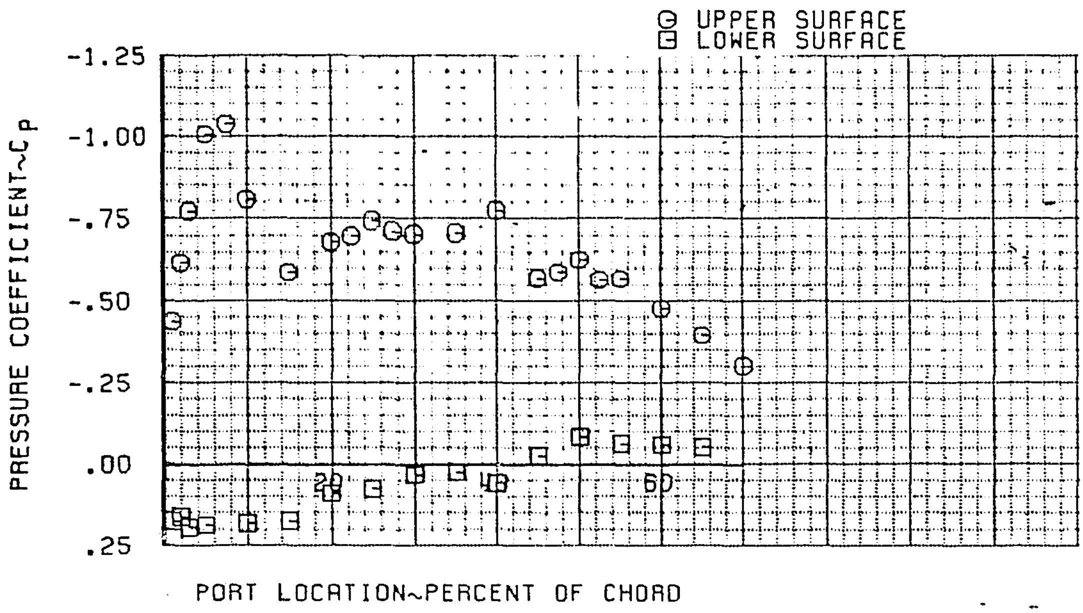


H_p	=	12 002m (39 376 ft)	M =	0.800
GW	=	218 881 kg (482 550 lbm)	α =	2.9 deg
Q	=	8.660 kPa (1.256 PSI)	FLAPS = 0 deg	
Vc	=	455 2 km/h (245 8 KTS)	LANDING GEAR UP	

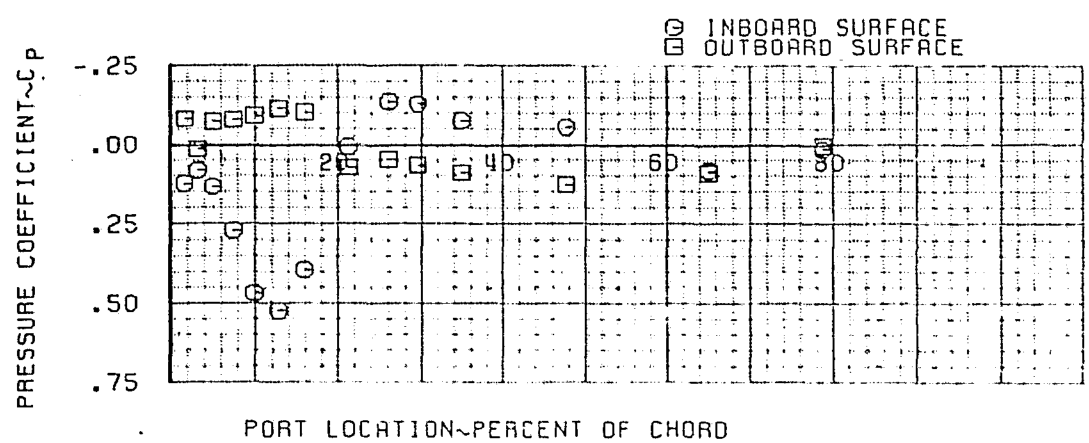
Figure B-6. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.003)

125209-241

• PRESSURE DIST WBL 510 - IPSA



• PRESS DIST E3 PYLON WL 180 - IPSA

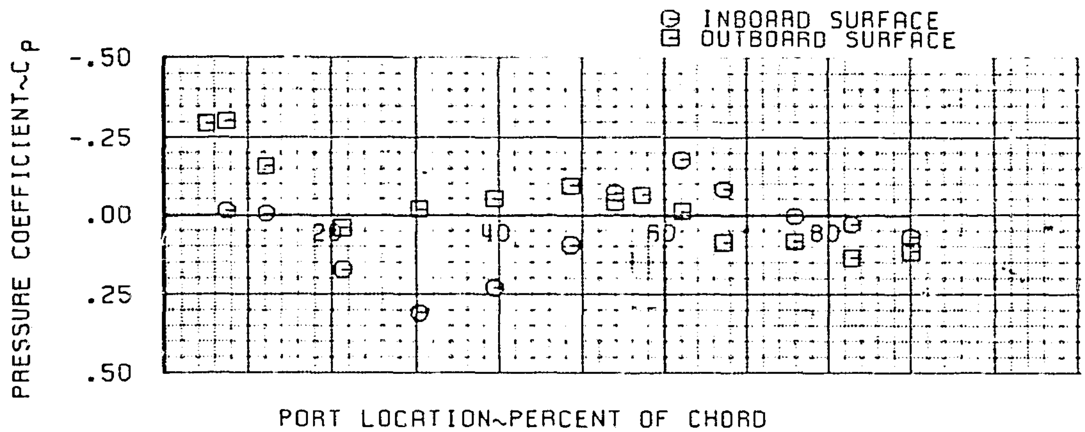


H_p	=	12 002m (39 376 ft)	M	=	0.800
GW	=	218 881 kg (482 550 lbm)	α	=	2.9 deg
Q	=	8 660 kPa (1.256 PSI)	FLAPS	=	0 deg
Vc	=	455.2 km/h (245.8 KTS)	LANDING GEAR UP		

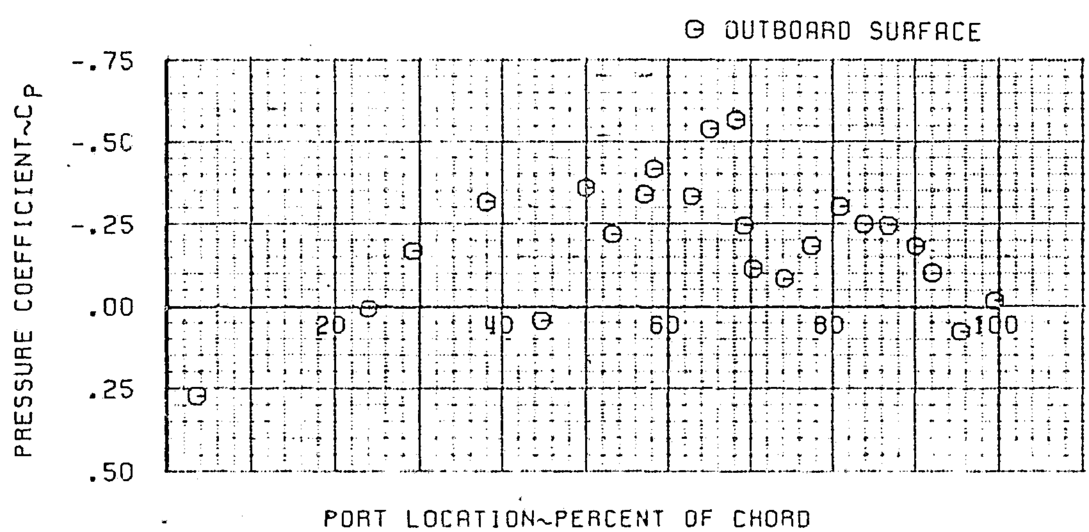
125209-242

Figure B-6. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.003) (Continued)

• PRESS DIST E3 PYLON WL 155 - IPSA



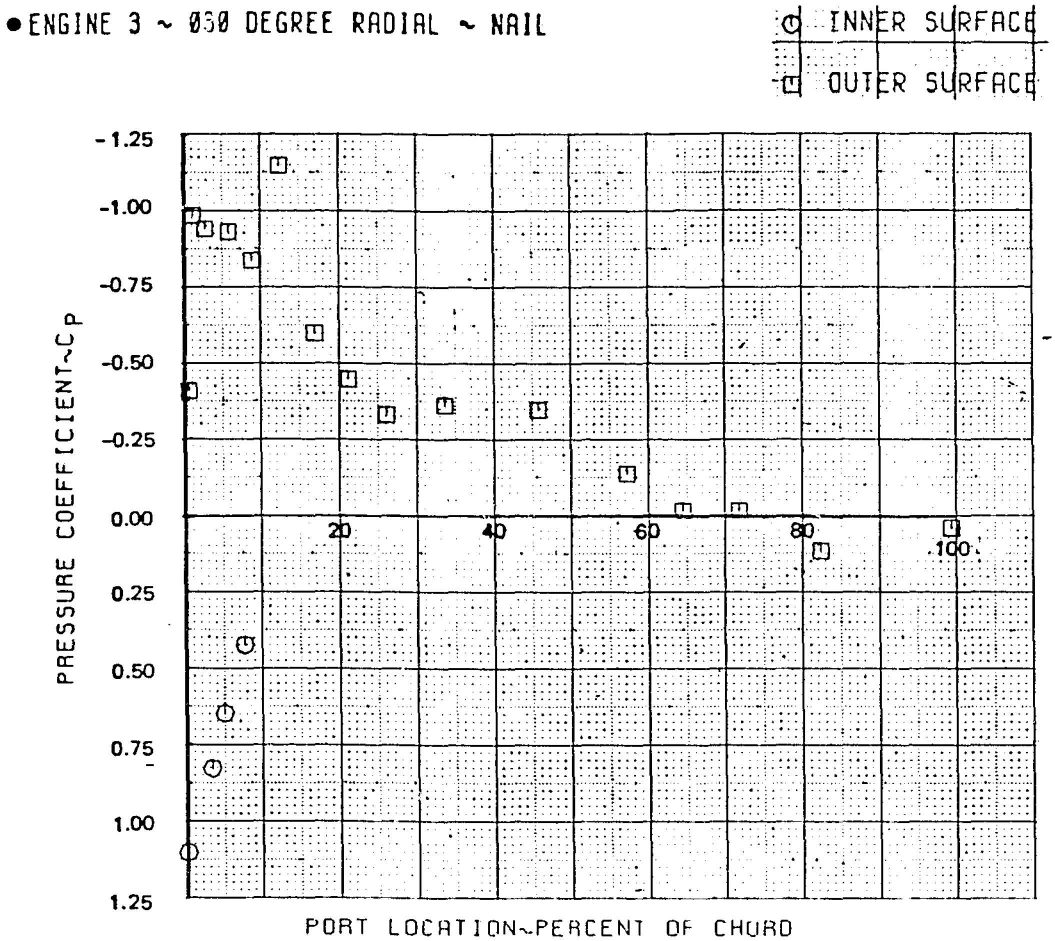
• PRESS DIST E3 CORE 030 DEG - IPSA.



H_p	= 12 002m (39 376 ft)	M =	0.800
GW	= 218 881 kg (482 550 lbm)	α =	2.9 deg
Q	= 8.660 kPa (1.256 PSI)	FLAPS = 0 deg	
Vc	= 455.2 km/h (245.8 KTS)	LANDING GEAR UP	

Figure B-6. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.003)(Continued)

125209-243

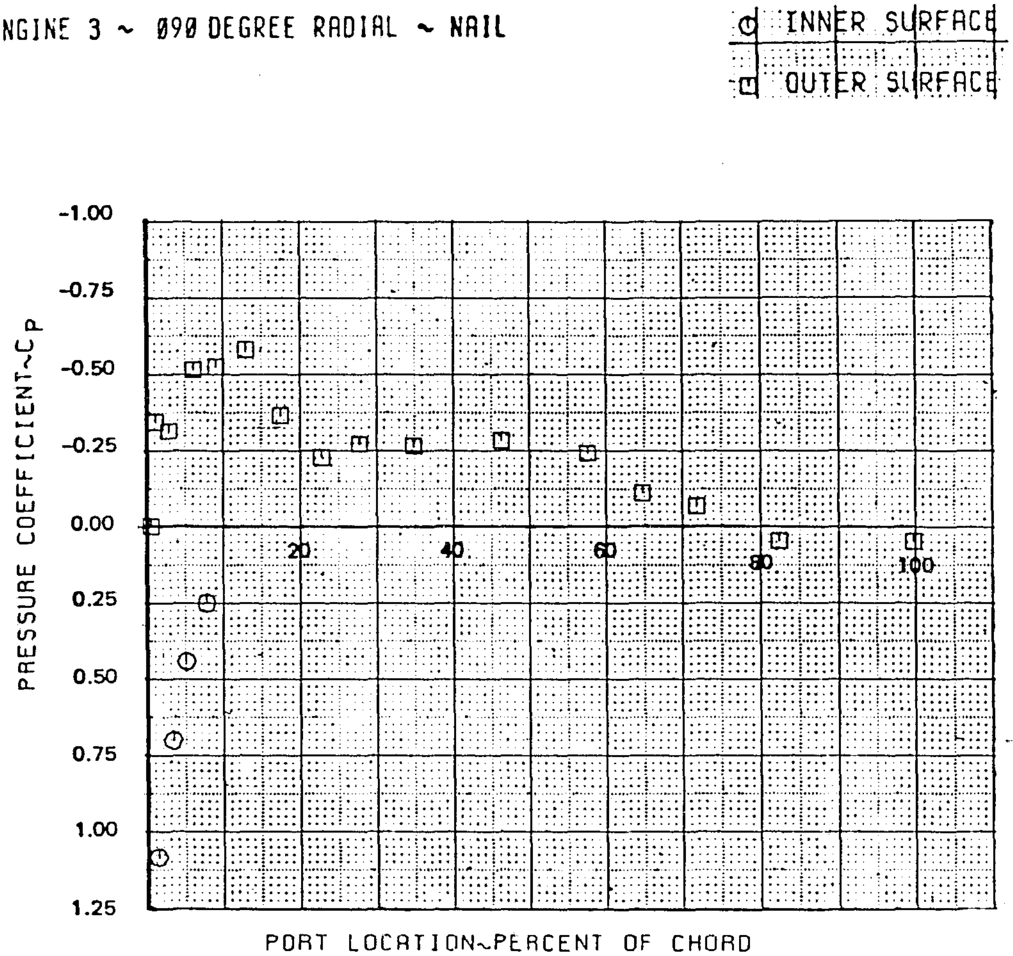


H_p	-	12 002m (39 376 ft)	M =	0.800
GW	-	218 881 kg (482 550 lbm)	α =	2.9 deg
Q	-	8,660 kPa (1.256 PSI)	FLAPS = 0 deg	
Vc	-	455.2 km/h (245.8 KTS)	LANDING GEAR UP	

125209-232A

Figure B-6. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.003)(Continued)

• ENGINE 3 ~ 090 DEGREE RADIAL ~ NAIL

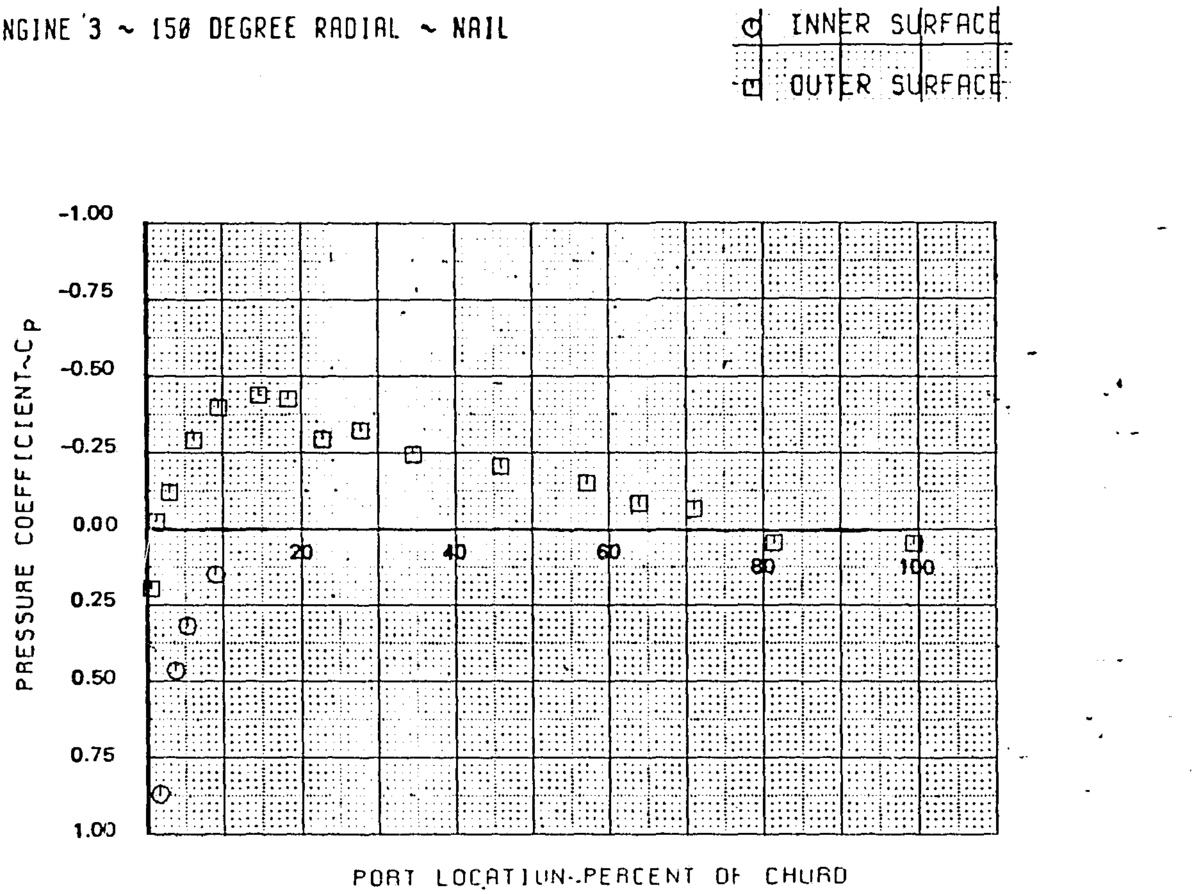


H_p	=	12 002m (39 376 ft)	M =	0.800
GW	=	218 831 kg (482 550 lbm)	α =	2.9 deg
Q	=	8.660 kPa (1.256 PSI)	FLAPS = 0 deg	
Vc	=	455.2 km/h (245.8 KTS)	LANDING GEAR UP	

125209-232A

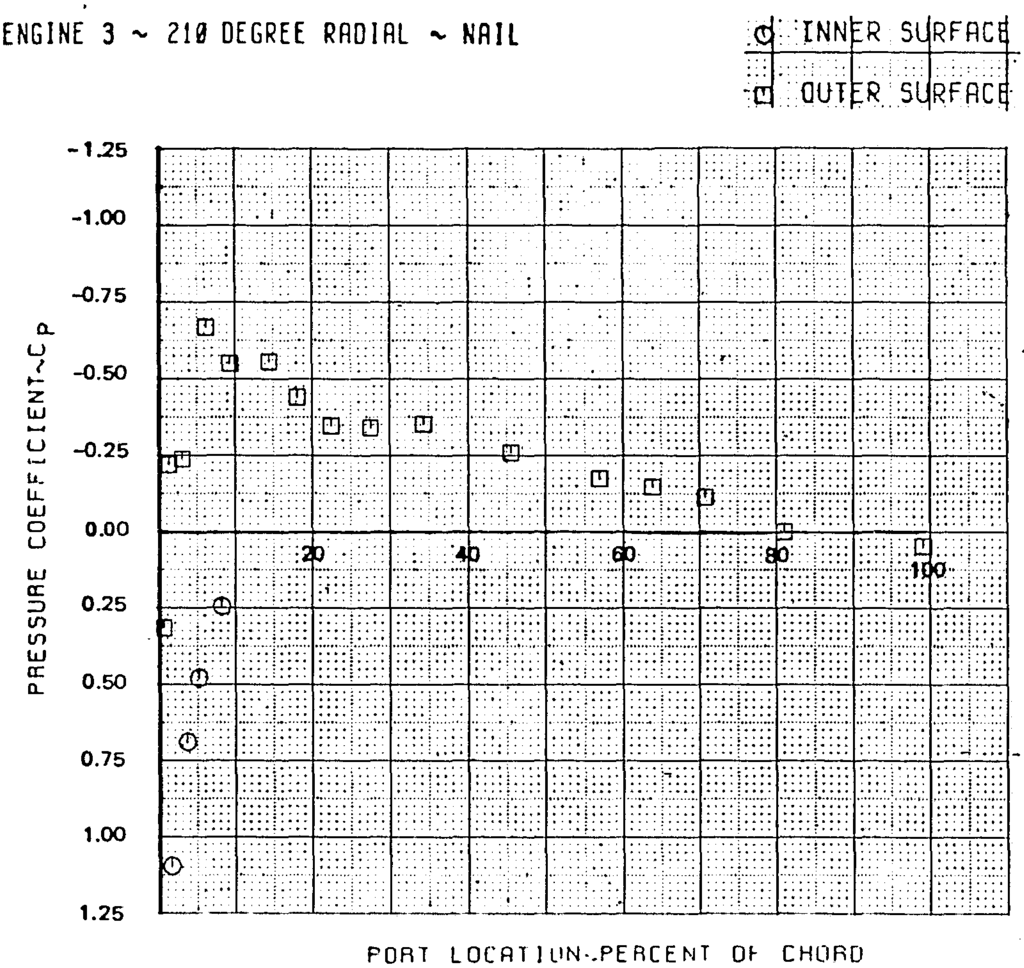
Figure B-6. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.003)(Continued)

● ENGINE 3 ~ 150 DEGREE RADIAL ~ NAIL



H_p	= 12 002m (39 376 ft)	M =	0.800
GW	= 218 881 kg (482 550 lbm)	α =	2.9 deg
Q	= 8.660 kPa (1.256 PSI)	FLAPS =	0 deg
Vc	= 455 2 km/h (245.8 KTS)	LANDING GEAR UP	

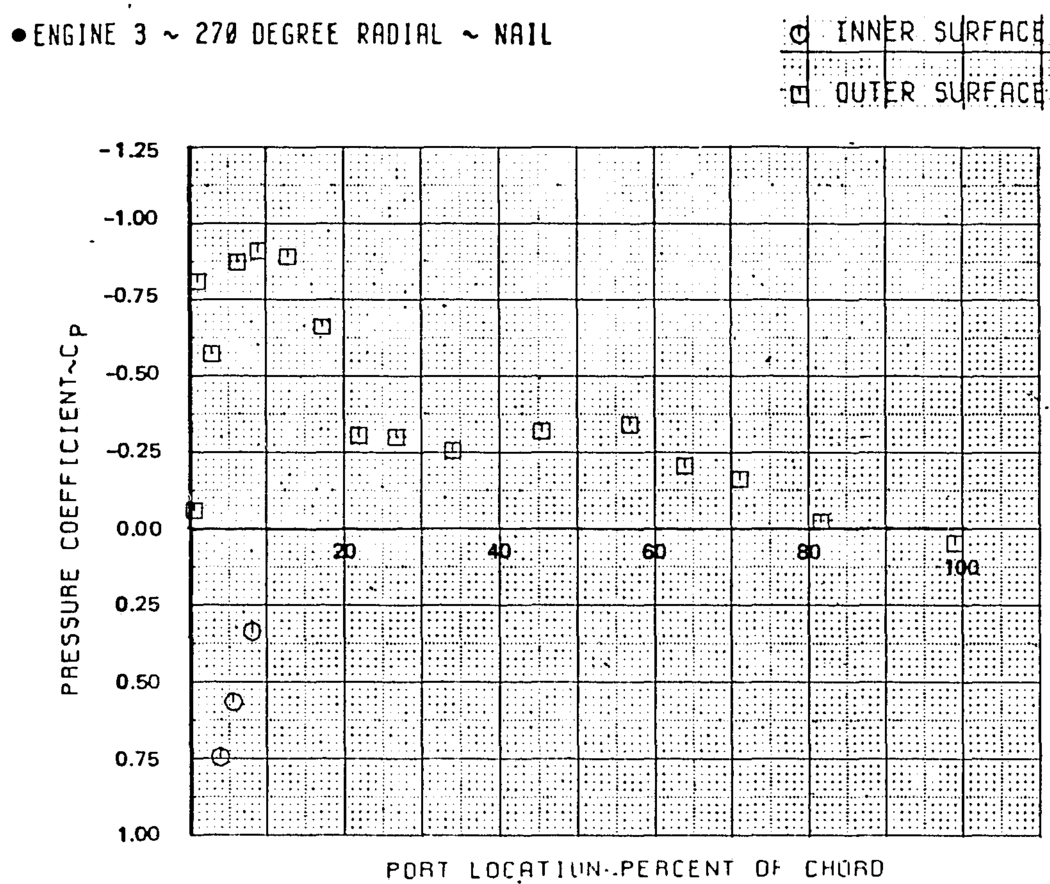
Figure B-6. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.003)(Continued)



H_p	= 12 002m (39 376 ft)	M	=	0.800
GW	= 218 831 kg (482 550 lbm)	α	=	2.9 deg
Q	= 8.660 kPa (1.256 PSI)	FLAPS	=	0 deg
Vc	= 455.2 km/h (245.8 KTS)	LANDING GEAR UP		

125209-232A

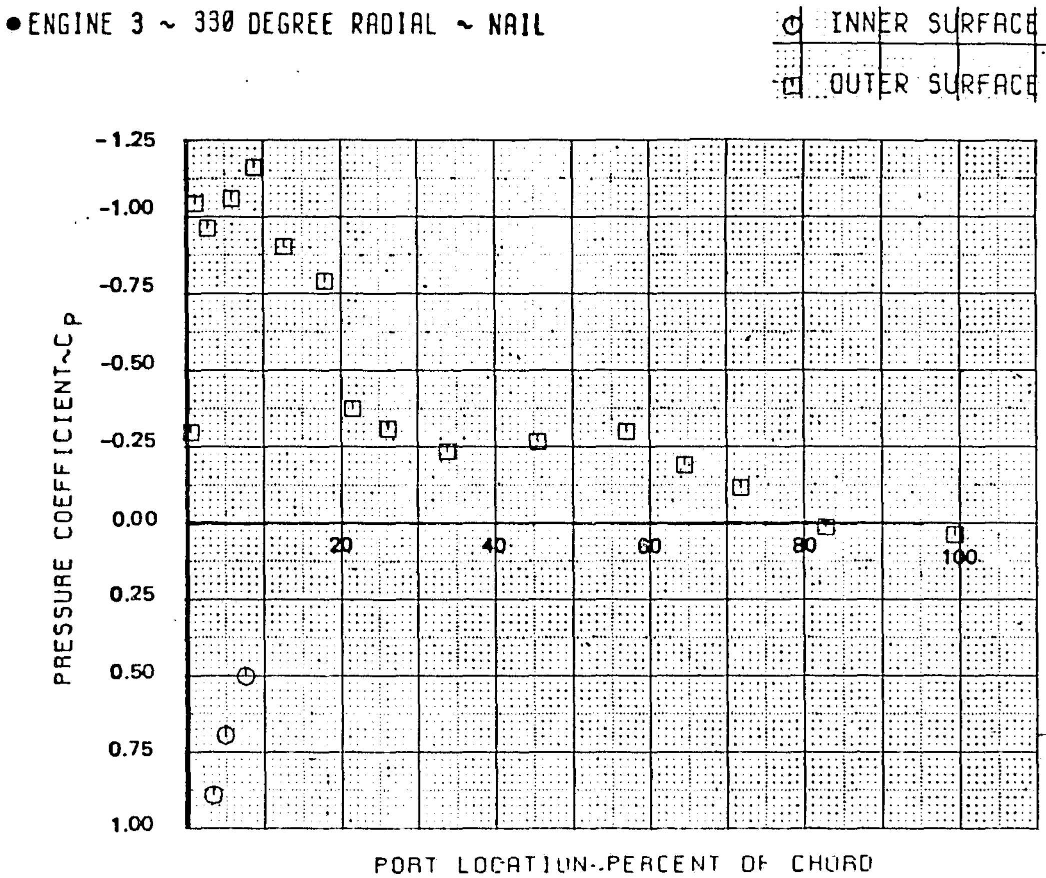
Figure B-6. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.003)(Continued)



H_p	= 12 002m (39 376 ft)		M =	0.800
GW	= 218 881 kg (482 550 lbm)		α =	2.9 deg
Q	= 8,660 kPa (1.256 PSI)		FLAPS = 0 deg	
Vc	= 455.2 km/h (245.8 KTS)		LANDING GEAR UP	

125209-232A

Figure B-6. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.003) (Continued)

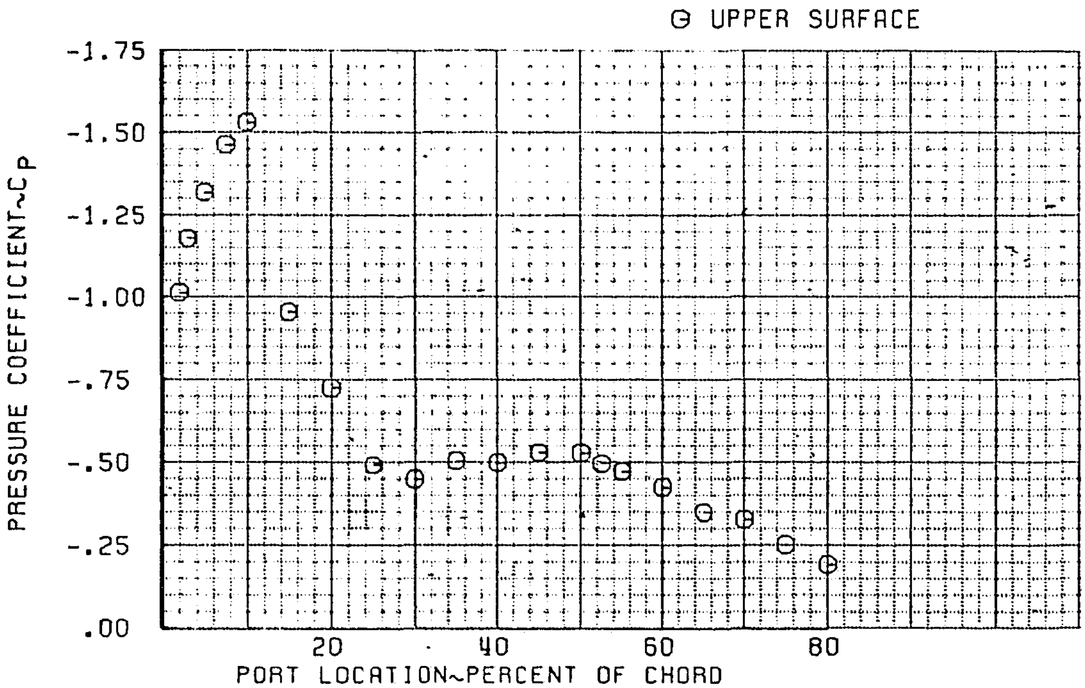


H_p	= 12 002m (39 376 ft)	M =	0.800
GW	= 218 881 kg (482 550 lbm)	α =	2.9 deg
Q	= 8.660 kPa (1.256 PSI)	FLAPS = 0 deg	
Vc	= 455.2 km/h (245.8 KTS)	LANDING GEAR UP	

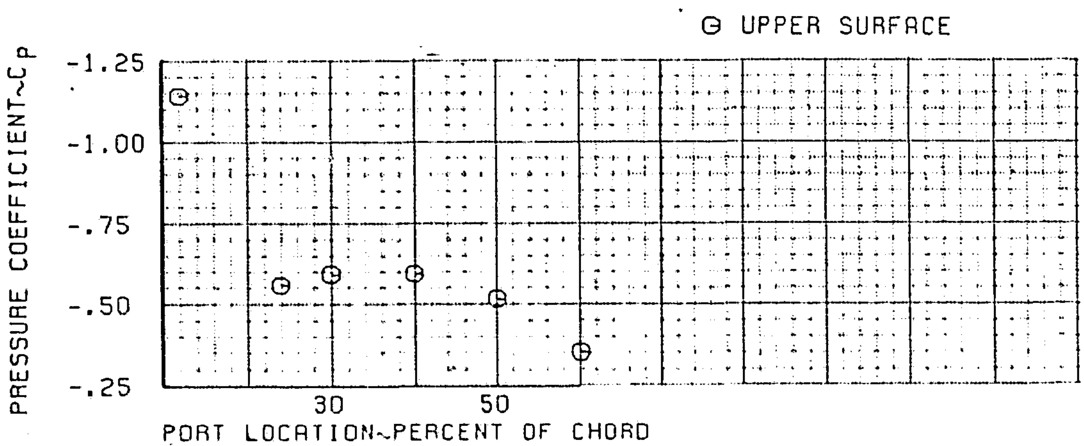
125209-232A

Figure B-6. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.003)(Continued)

• PRESSURE DIST WBL 809 - IPSA



• PRESS DIST WBL 834 TOP-IPSA

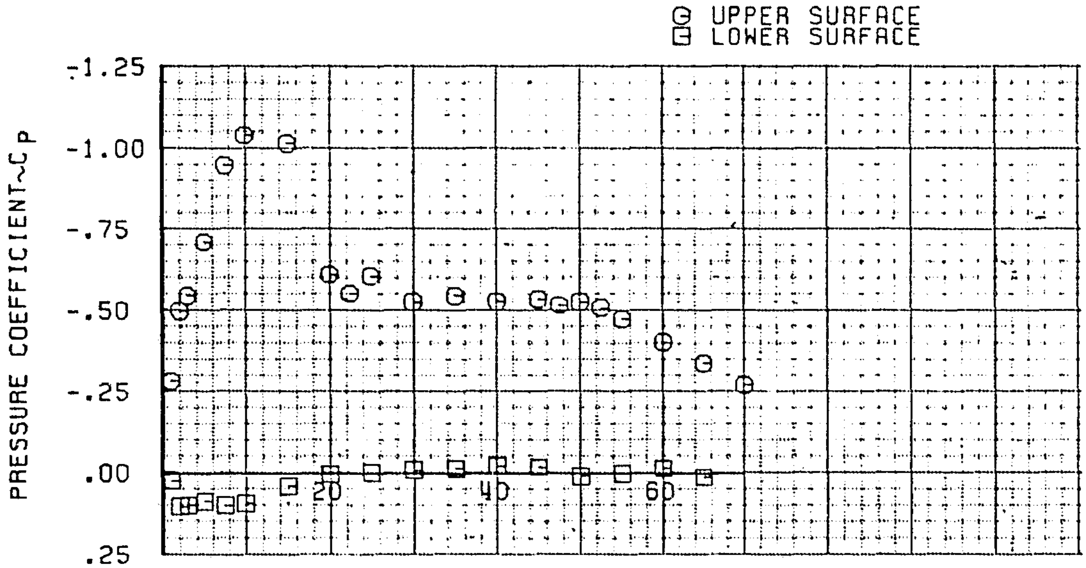


H_p	=	12 002m (39 376 ft)	M	=	0.800
GW	=	218 881 kg (482 550 lbm)	α	=	2.9 deg
Q	=	8.660 kPa (1.256 PSI)	FLAPS = 0 deg		
Vc	=	455.2 km/h (245.8 KTS)	LANDING GEAR UP		

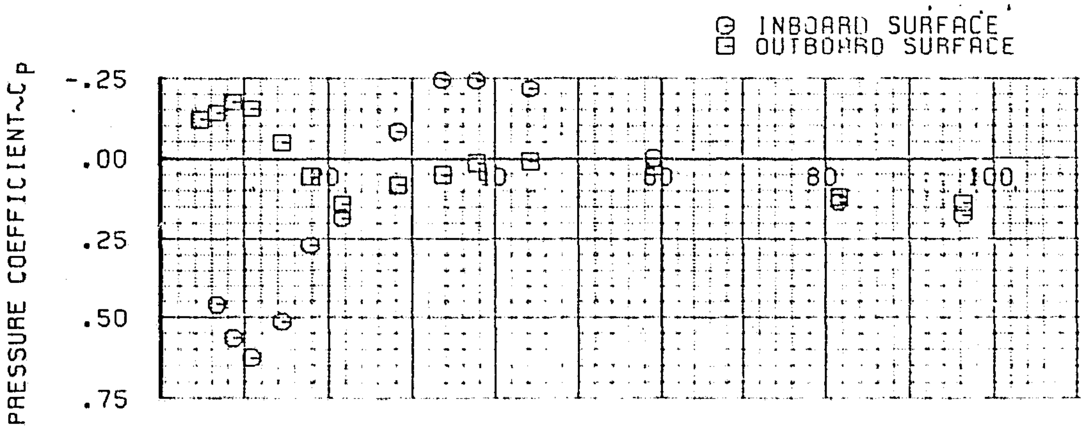
125209-247

Figure B-6. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.003)(Continued)

• PRESSURE DIST WBL 870 - IPSA



• PRESS DIST E4 PYLON WL 180 - IPSA

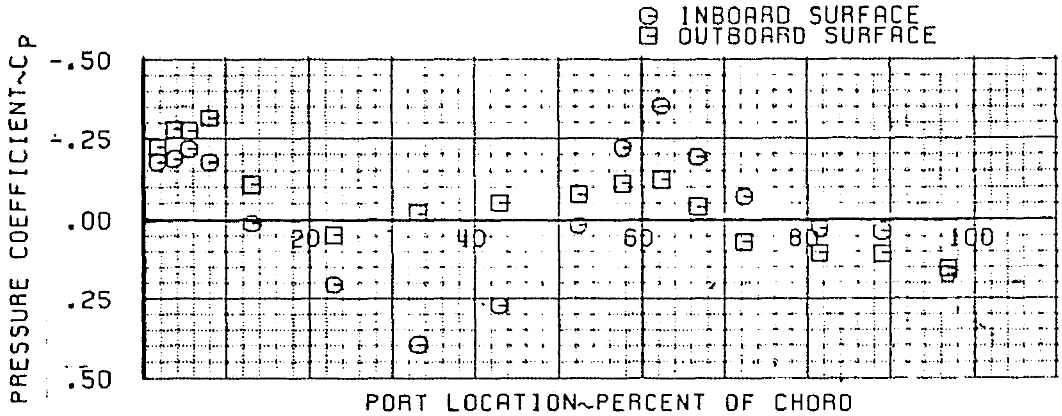


H_p	=	12 002m (39 376 ft)	M	=	0.800
GW	=	218 881 kg (482 550 lbm)	α	=	2.9 deg
Q	=	8.660 kPa (1.256 PSI)	FLAPS = 0 deg		
Vc	=	455 2 km/h (245.8 KTS)	LANDING GEAR UP		

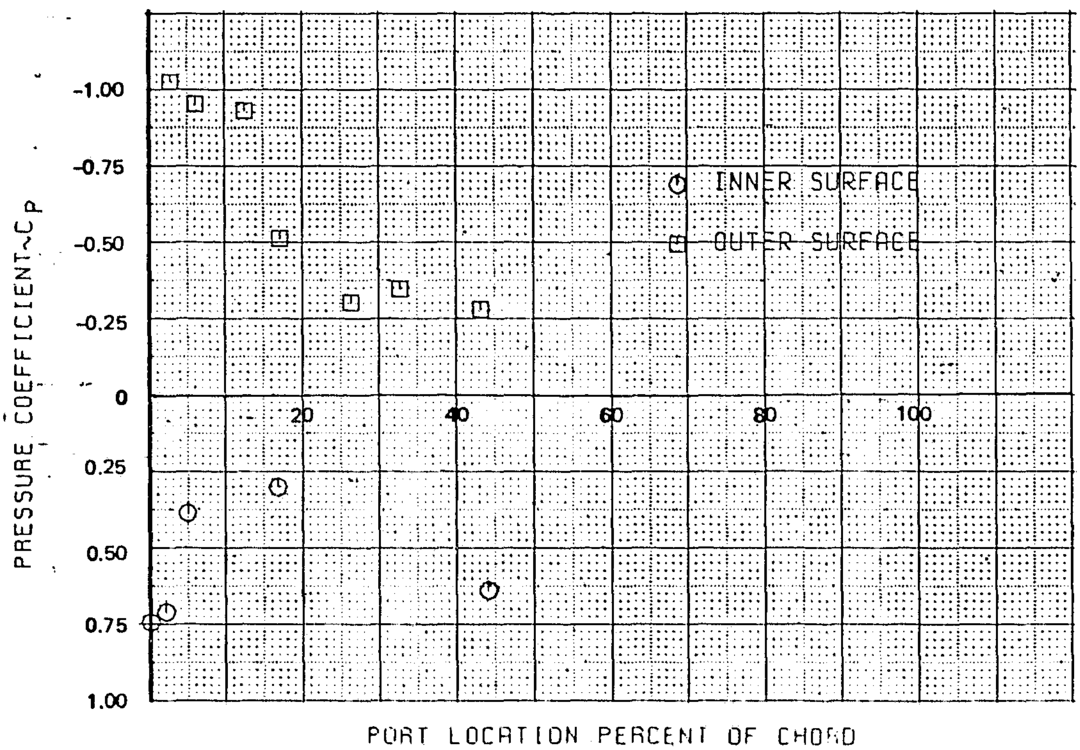
125209-248

Figure B-6. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.003)(Continued)

• PRESS DIST E4 PYLON WL 155 - IPSA



• ENGINE 4 ~ 060 DEGREE RADIAL ~ NAIL

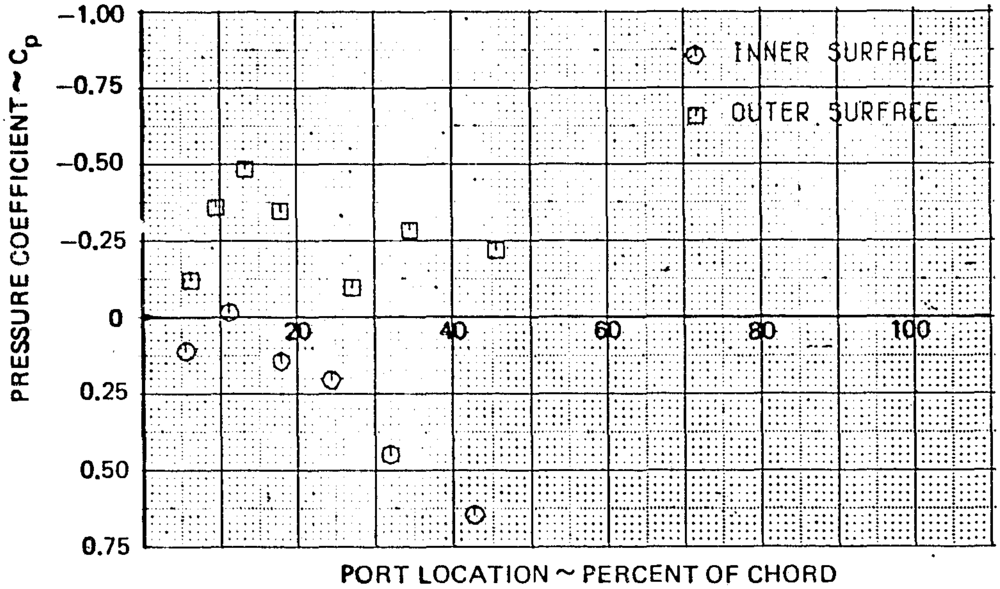


H_p	=	12 002m (39 376 ft)	M	=	0.800
GW	=	218 881 kg (482 550 lbm)	α	=	2.9 deg
Q	=	8.660 kPa (1.256 PSI)	FLAPS	=	0 deg
Vc	=	455.2 km/h (245.8 KTS)	LANDING GEAR UP		

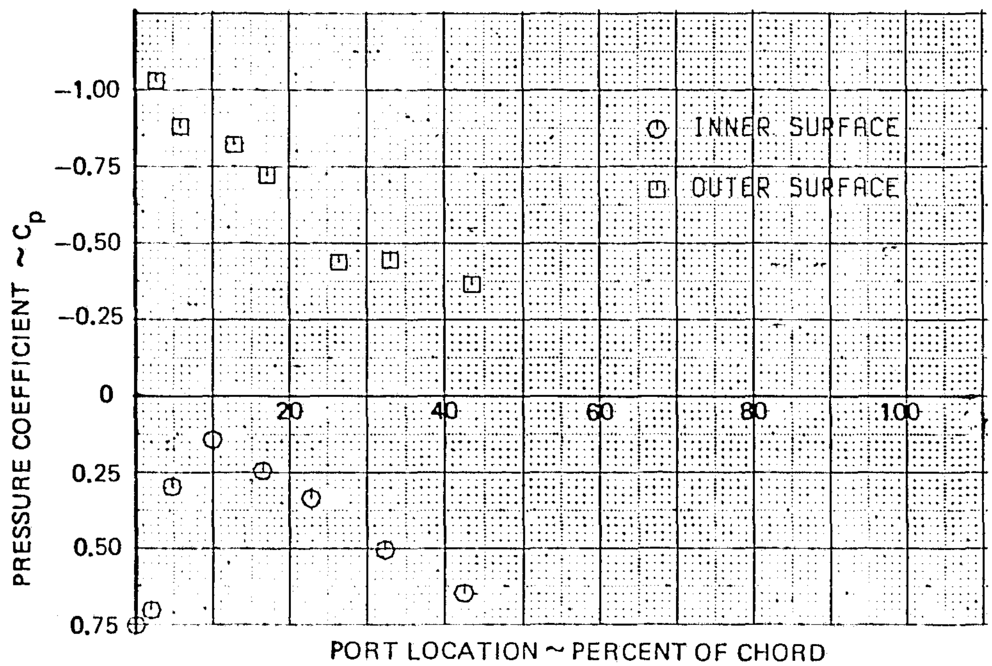
Figure B-6. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.003) (Continued)

125209-249

● ENGINE 4 ~ 180 DEGREE RADIAL–NAIL



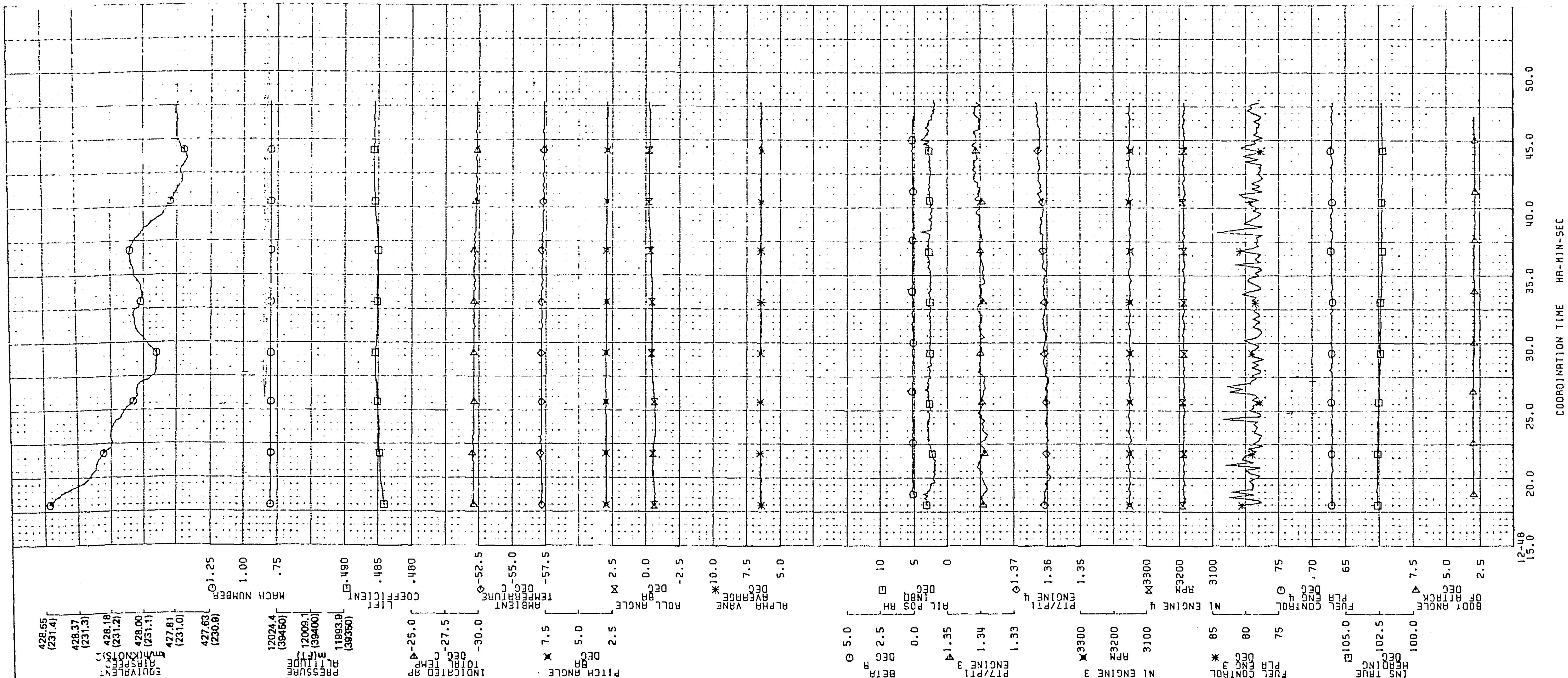
● ENGINE 4 ~ 300 DEGREE RADIAL–NAIL



H_P	=	12 002m (39 376 ft)	M	=	0.800
GW	=	218 881 kg (482 550 lbm)	α	=	2.9 deg
Q	=	8.660 kPa (1.256 PSI)	FLAPS = 0 deg		
Vc	=	455.2 km/h (245.8 KTS)	LANDING GEAR UP		

125209-250

Figure B-6. Pressure Coefficient Plots (Test 273-12, Condition 1.00.137.003)(Concluded)

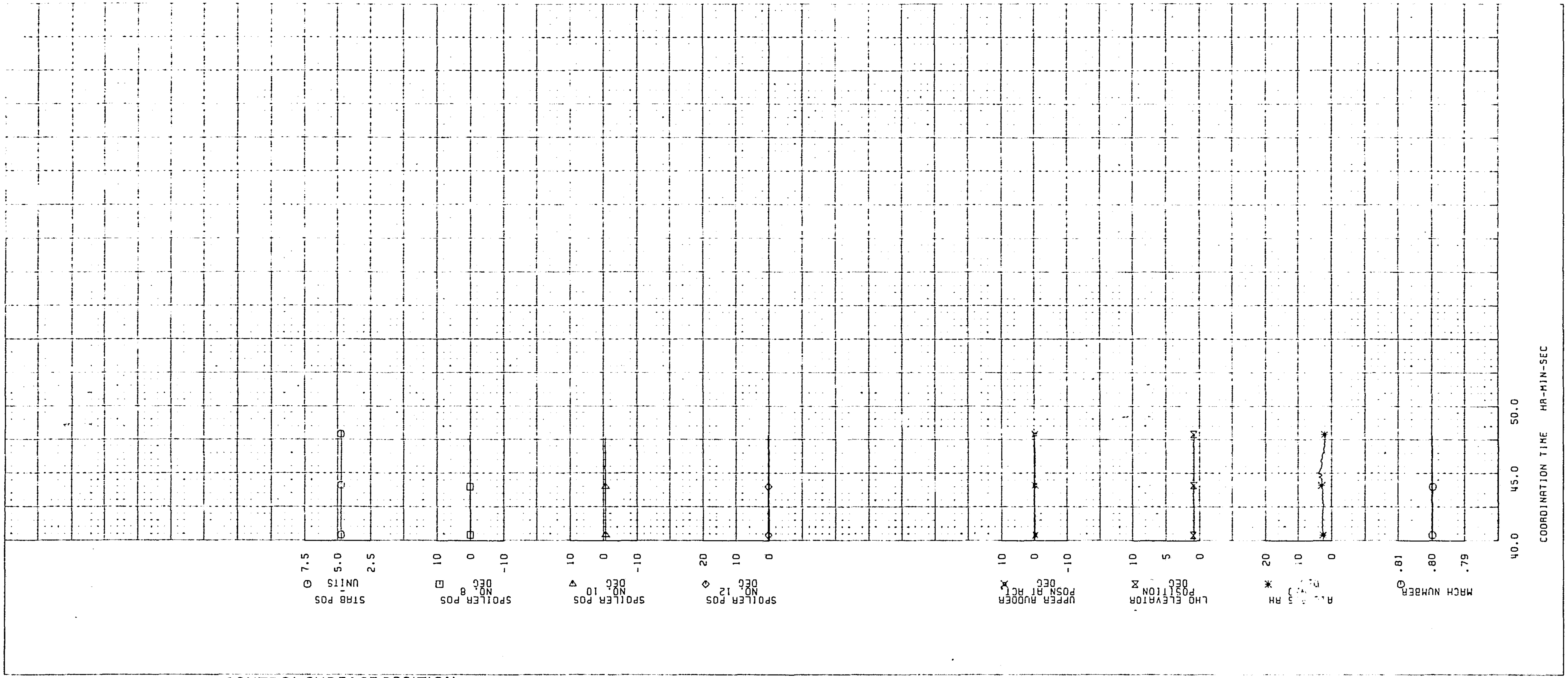


• CONDITION STABILITY

H_p	= 12 002 m (39 376 ft)	M =	0.800
GW	= 218 881 kg (482 550 lbm)	α =	2.9 deg
Q	= 8.660 kPa (1.256 PSI)	FLAPS = 0 deg	
Vc	= 455.2 km/h (245.8 KTS)	LANDING GEAR UP	

Figure B-6. Pressure Coefficient Data (Test 273-12, Condition 1.00.137.003) (Continued)

125209-261

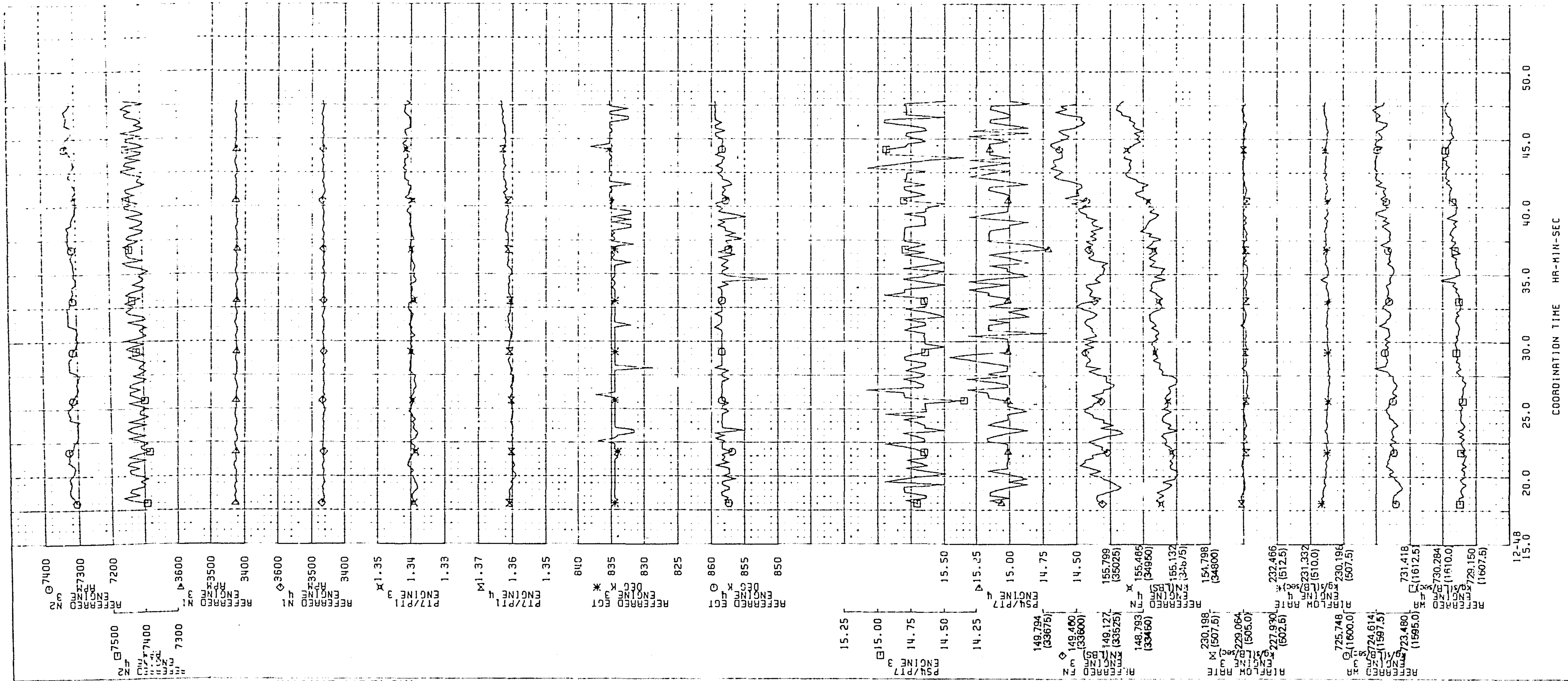


• CONTROL SURFACE POSITION

H_p	= 12 002m (39 376 ft)	M =	0.800
GW	= 218 881 kg (482 550 lbm)	α =	2.9 deg
Q	= 8.660 kPa (1.256 PSI)	FLAPS = 0 deg	
Vc	= 455.2 km/h (245.8 KTS)	LANDING GEAR UP	

Figure B-6. Pressure Coefficient Data (Test 273-12, Condition 1.00.137.003) (Continued)

125209-253



• ENGINE AIRFLOW

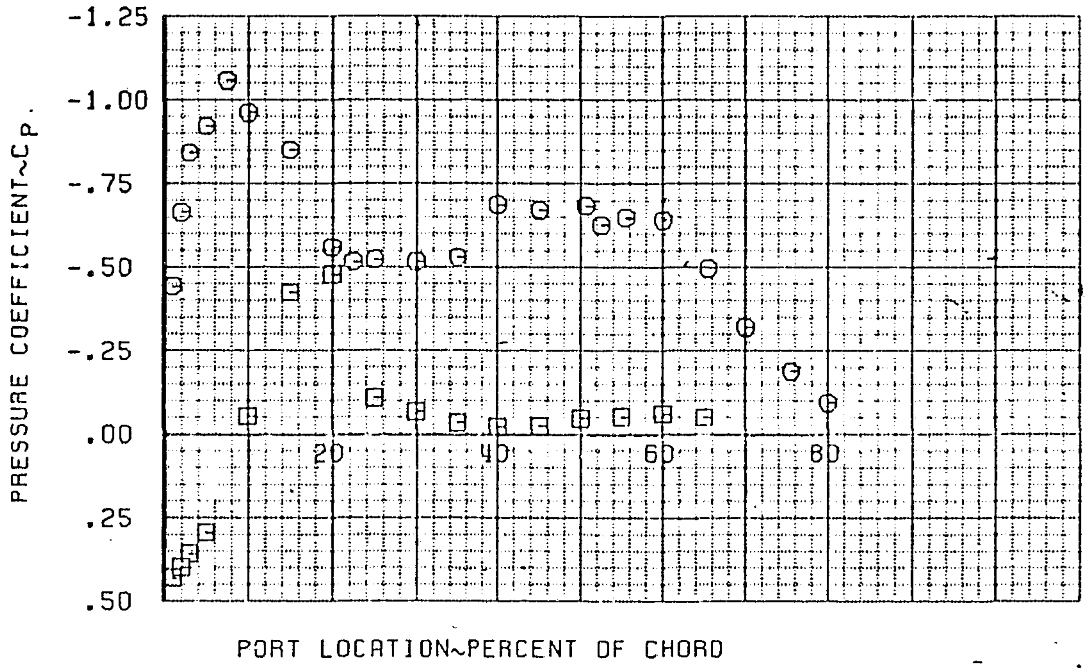
H_p	= 12 002m (39 376 ft)	M =	0.800
GW	= 218 881 kg (482 550 lbm)	α =	2.9 deg
Q	= 8 660 kPa (1.256 PSI)	FLAPS = 0 deg	
Vc	= 455 2 km/h (245.8 KTS)	LANDING GEAR UP	

Figure B-6. Pressure Coefficient Data (Test 273-12, Condition 1.00.137.003) (Concluded)

126209-252

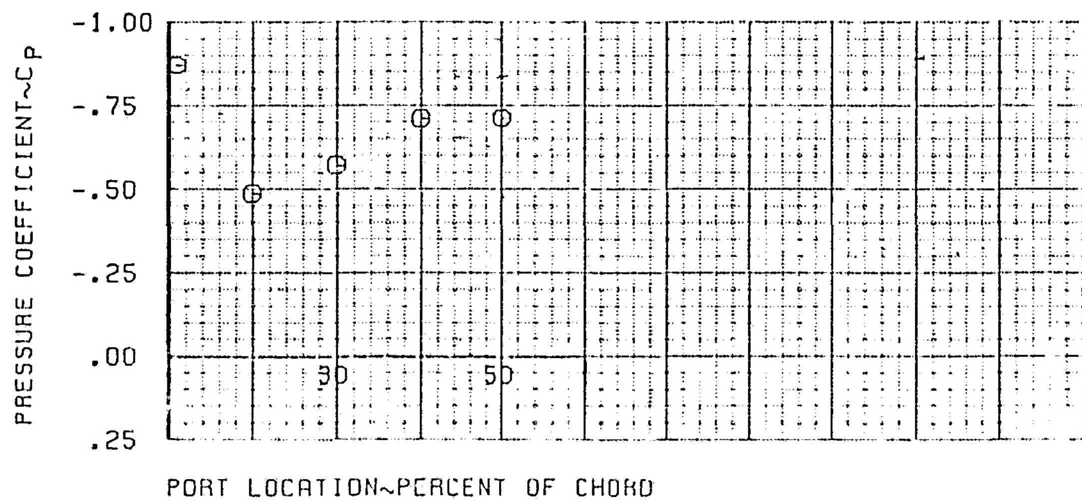
• PRESSURE DIST WBL 445 - IPSA

⊖ UPPER SURFACE
⊟ LOWER SURFACE



• PRESS DIST WBL 470 TOP-IPSA

⊖ UPPER SURFACE

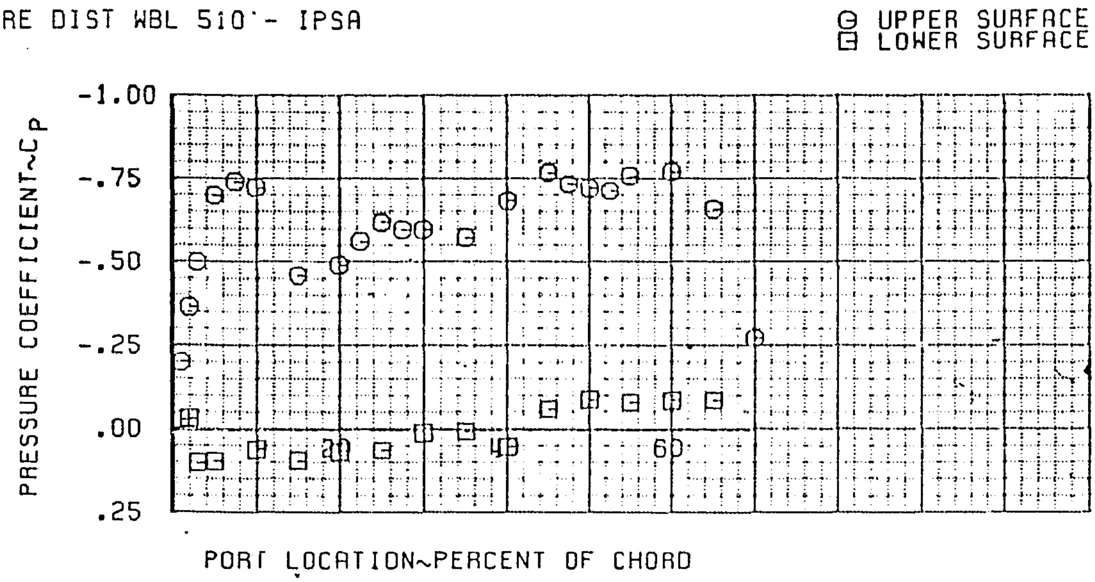


H_p	=	11 591m (38,028 ft)	M	=	0.855
GW	=	216 946 kg (478,283 lbm)	α	=	1.7 deg
Q	=	10.556 kPa (1.531 PSI)	FLAPS = 0 deg		
V_c	=	506.2 km/h (273.3 KTS)	LANDING GEAR UP		

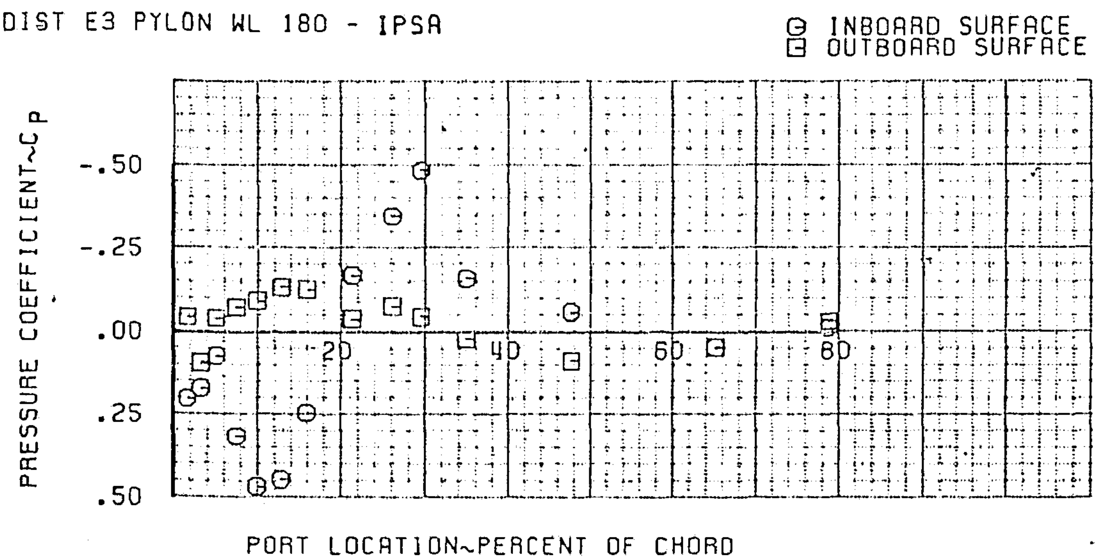
125209-254

Figure B-7. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.001)

• PRESSURE DIST WBL 510 - IPSA



• PRESS DIST E3 PYLON WL 180 - IPSA

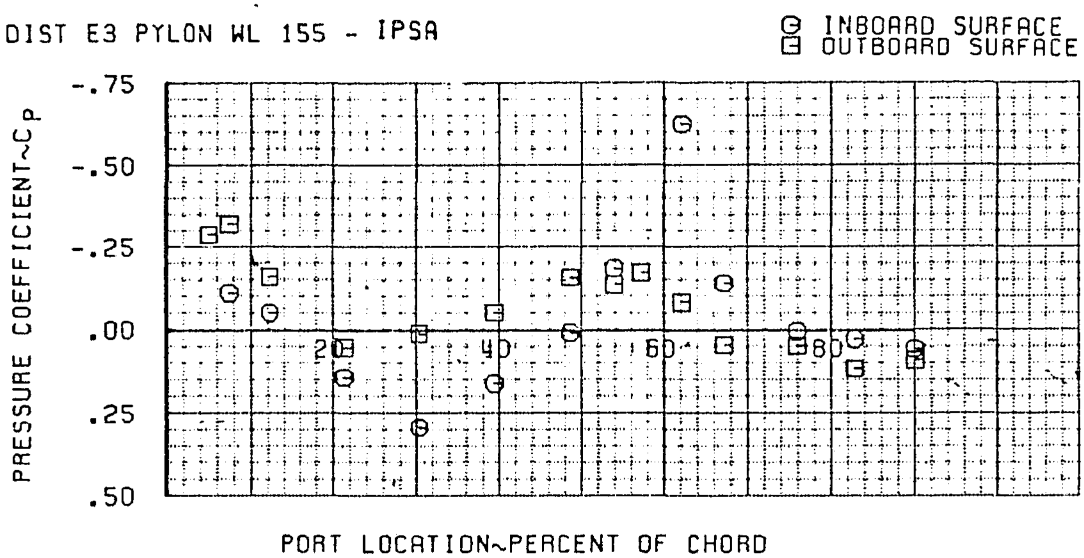


H_p = 11 591m (38,028 ft)		M = 0.855	
GW = 216 946 kg (478,283 lbm)		α = 1.7 deg	
Q = 10.556 kPa (1.531 PSI)		FLAPS = 0 deg	
V_c = 506.2 km/h (273.3 KTS)		LANDING GEAR UP	

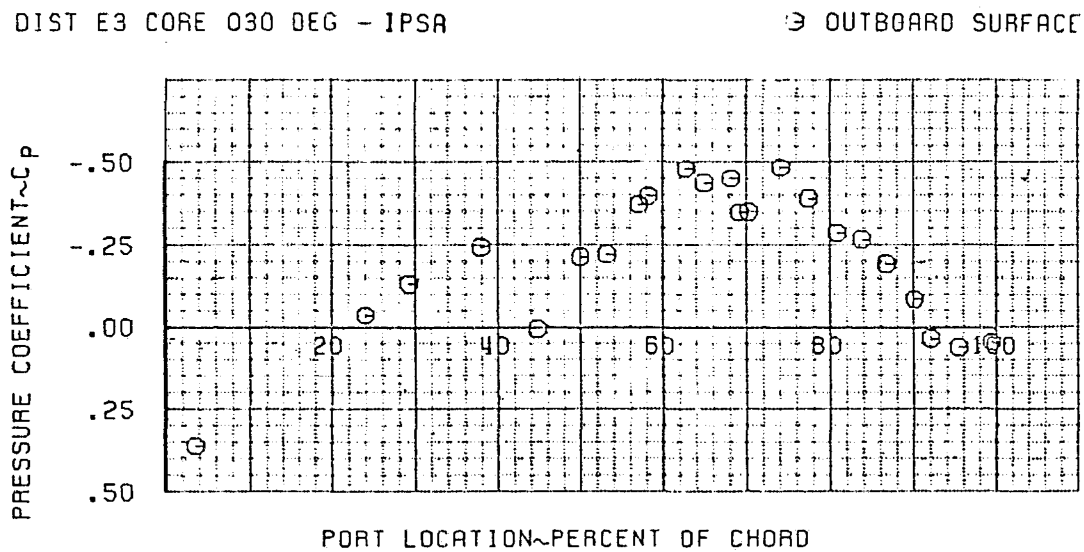
125209-255

Figure B-7. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.001)(Continued)

●PRESS DIST E3 PYLON WL 155 - IPSA



● PRESS DIST E3 CORE 030 DEG - IPSA

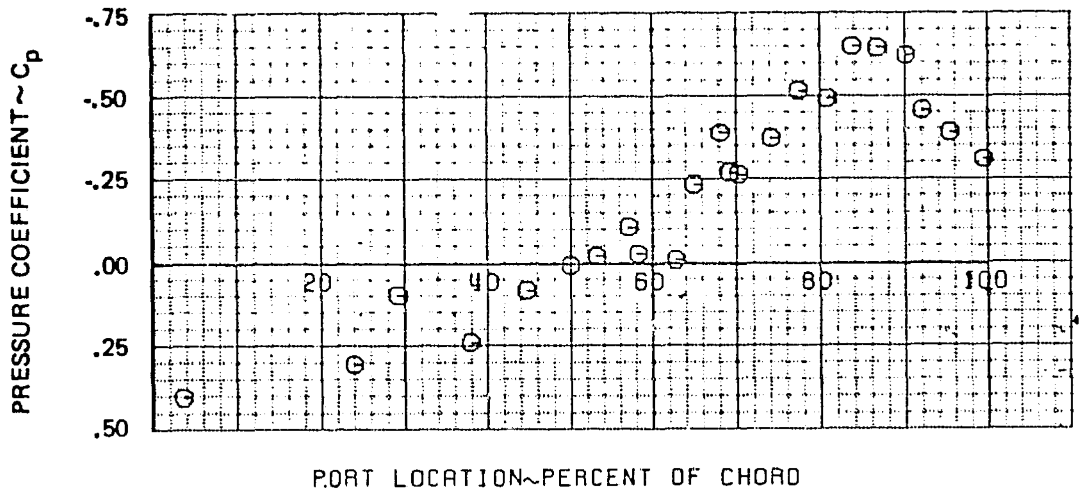


H_p	= 11 591m (38 028 ft)		M	= 0.855
GW	= 216 946 kg (478 283 lbm)		α	= 1.7 deg
Q	= 10.556 kPa (1.531 PSI)		FLAPS = 0 deg	
V_c	= 506 2 km/h (273.3 KTS)		LANDING GEAR UP	

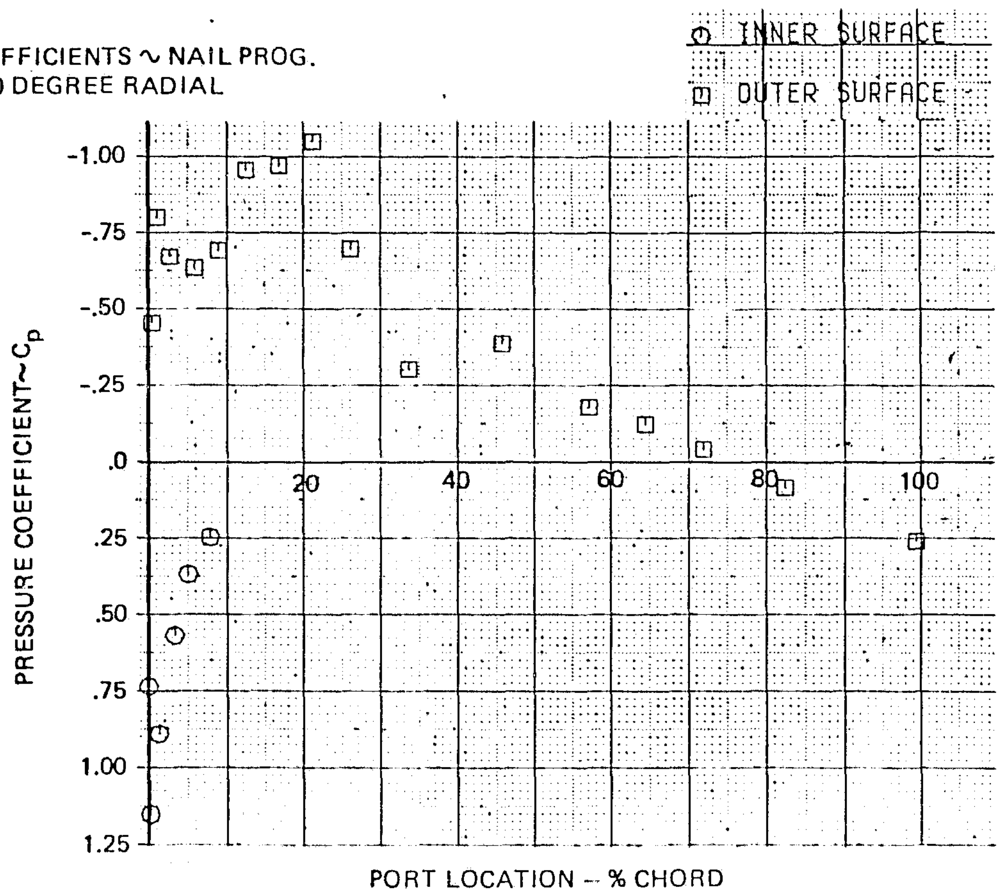
125209-256

Figure B-7. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.001)(Continued)

• PRESSURE DIST E3 CORE 330 DEG - IPSA



• PRESSURE COEFFICIENTS ∿ NAIL PROG.
ENGINE 3 ∿ 030 DEGREE RADIAL

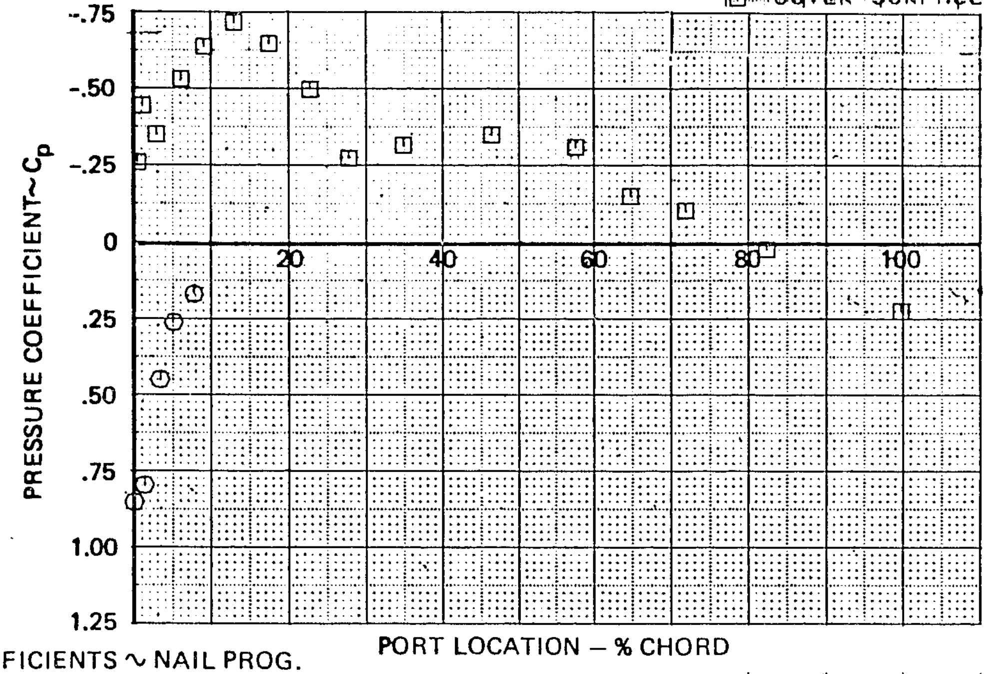


H_p = 11 591m (38 028 ft)		M = 0.855	
GW = 216 946 kg (478 283 lbm)		α = 1.7 deg	
Q = 10 556 kPa (1.531 PSI)		FLAPS = 0 deg	
V_c = 506 2 km/h (273.3 KTS)		LANDING GEAR UP	

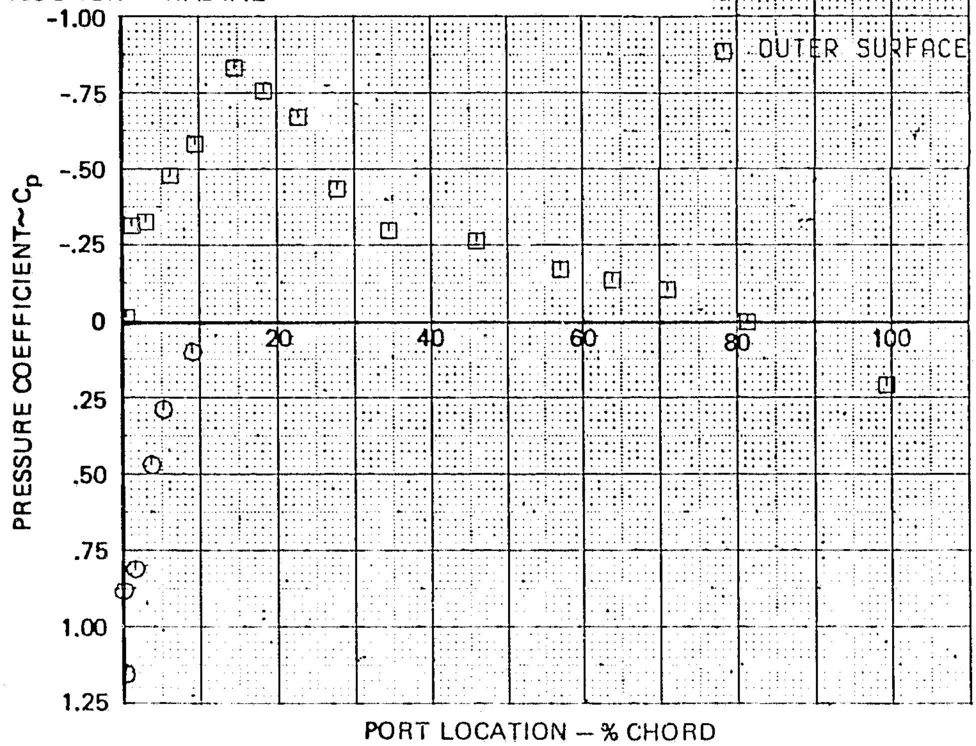
125209-257

Figure B-7. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.001)(Continued)

• PRESSURE COEFFICIENTS ~ NAIL PROG.
ENGINE 3 ~ 090 DEGREE RADIAL



• PRESSURE COEFFICIENTS ~ NAIL PROG.
ENGINE 3 ~ 150 DEGREE RADIAL

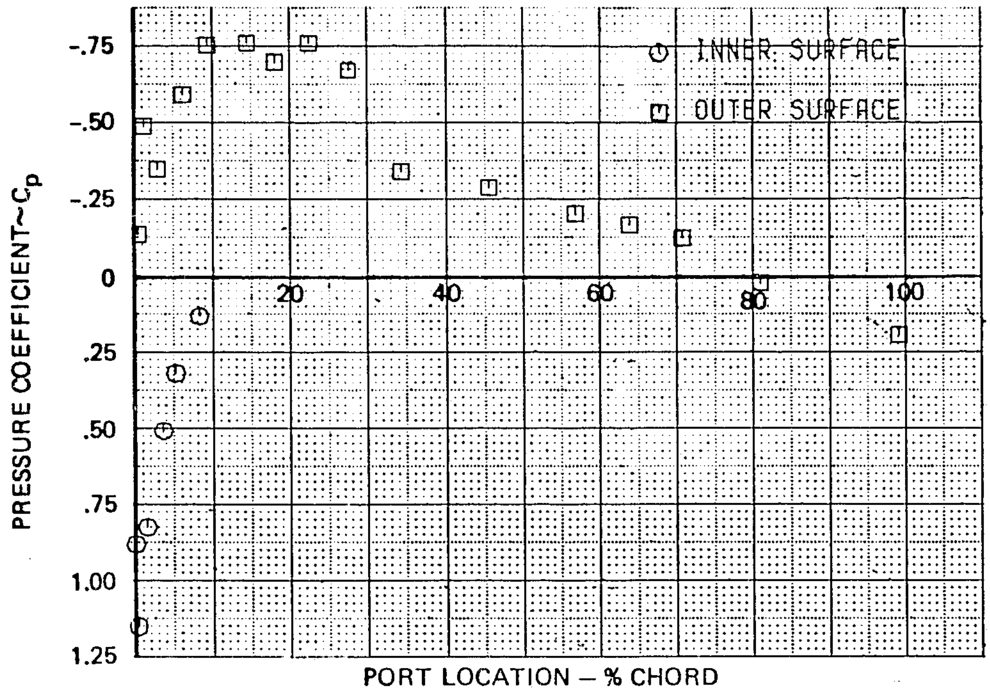


H_p	=	11 591m (38 028 ft)	M	=	0.855
GW	=	216 946 kg (478 283 lbm)	α	=	1.7 deg
Q	=	10.556 kPa (1.531 PSI)	FLAPS	=	0 deg
V_c	=	506.2 km/h (273.3 KTS)	LANDING GEAR UP		

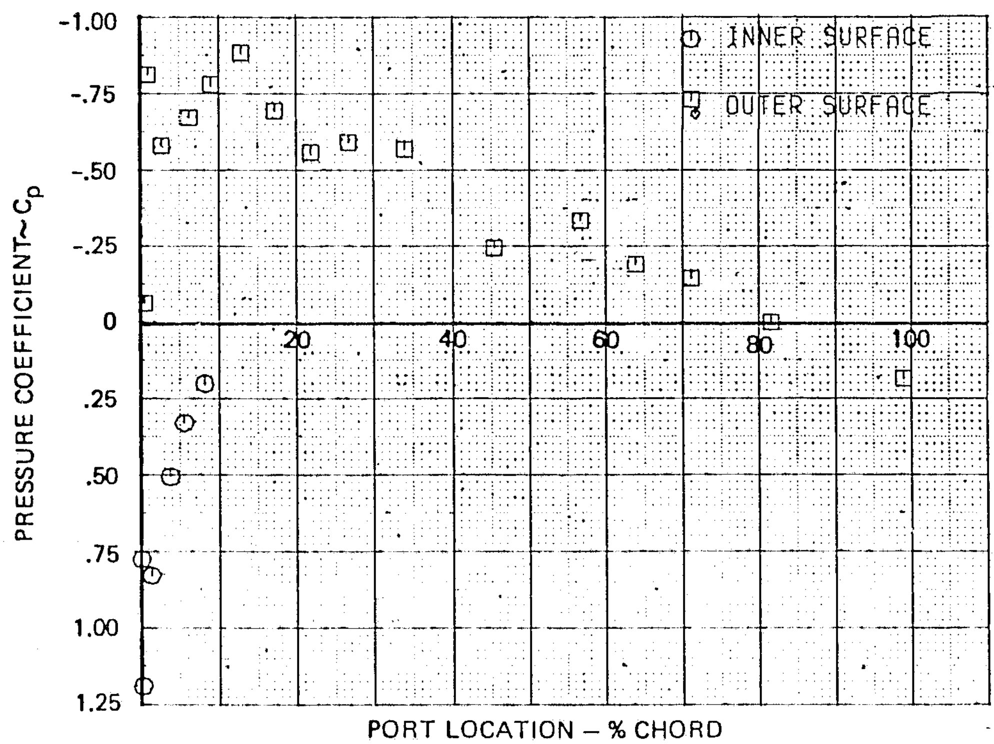
125209-258

Figure B-7. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.001)(Continued)

- PRESSURE COEFFICIENTS ∿ NAIL PROG.
  ENGINE 3 ∿ 210 DEGREE RADIAL



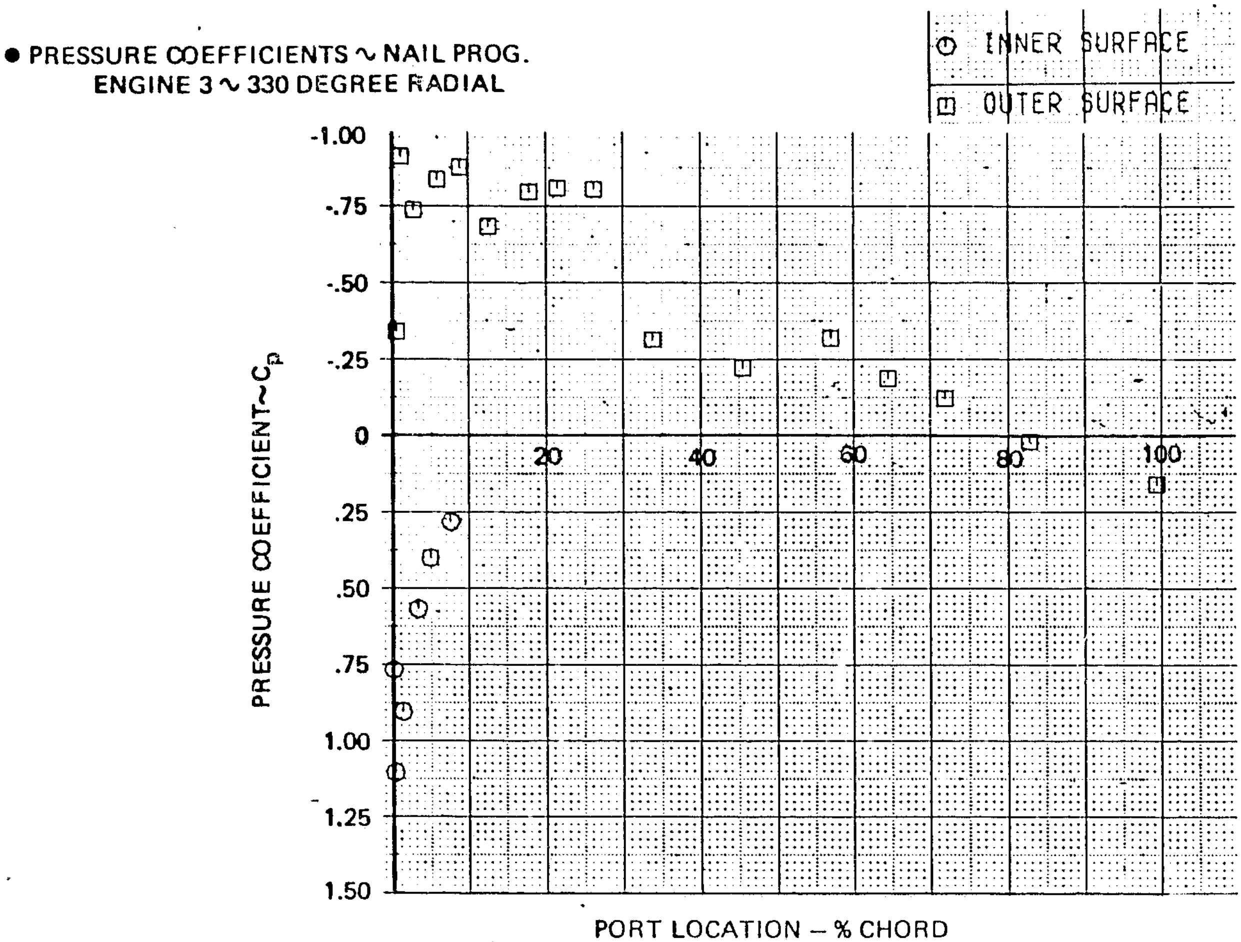
- PRESSURE COEFFICIENTS ∿ NAIL PROG.
  ENGINE 3 ∿ 270 DEGREE RADIAL



H_p	=	11 591m (38 028 ft)	M	=	0.855
GW	=	216 946 kg (478 283 lbm)	α	=	1.7 deg
Q	=	10.556 kPa (1.531 PSI)	FLAPS = 0 deg		
V_c	=	506.2 km/h (273.3 KTS)	LANDING GEAR UP		

125209-259

Figure B-7. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.001)(Continued)



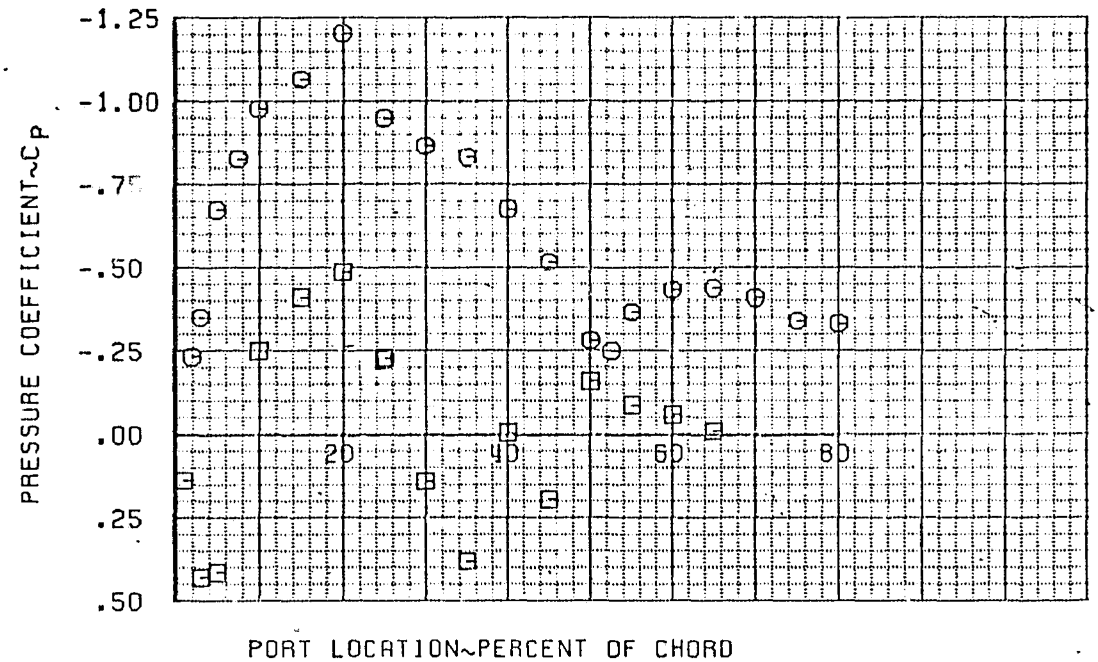
H_p	=	11 591m (38 028 ft)	M	=	0.855
GW	=	216 946 kg (478 283 lbm)	α	=	1.7 deg
Q	=	10.556 kPa (1.531 PSI)	FLAPS = 0 deg		
V_c	=	506.2 km/h (273.3 KTS)	LANDING GEAR UP		

Figure B-7. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.001)(Continued)

125209-260

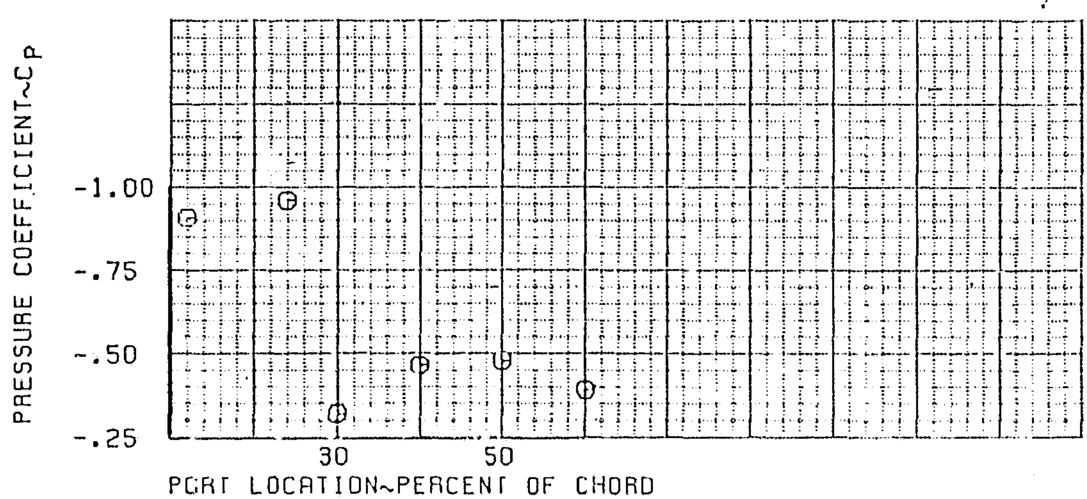
● PRESSURE DIST WBL 809 - IPSA

⊖ UPPER SURFACE
⊟ LOWER SURFACE



● PRESS DIST WBL 834 TOP-IPSA

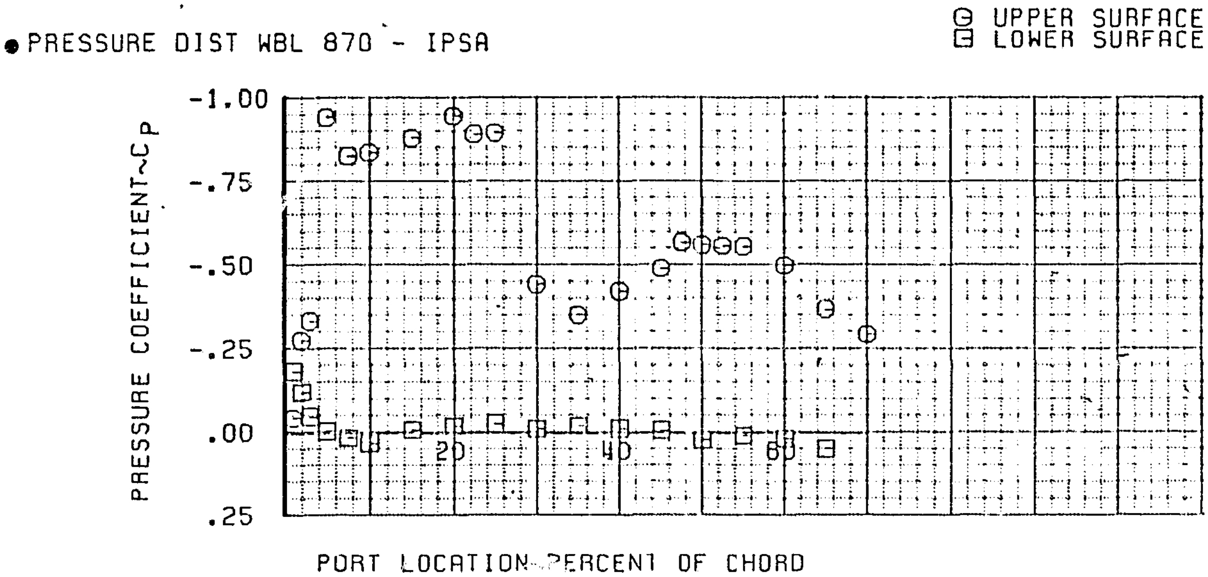
⊖ UPPER SURFACE

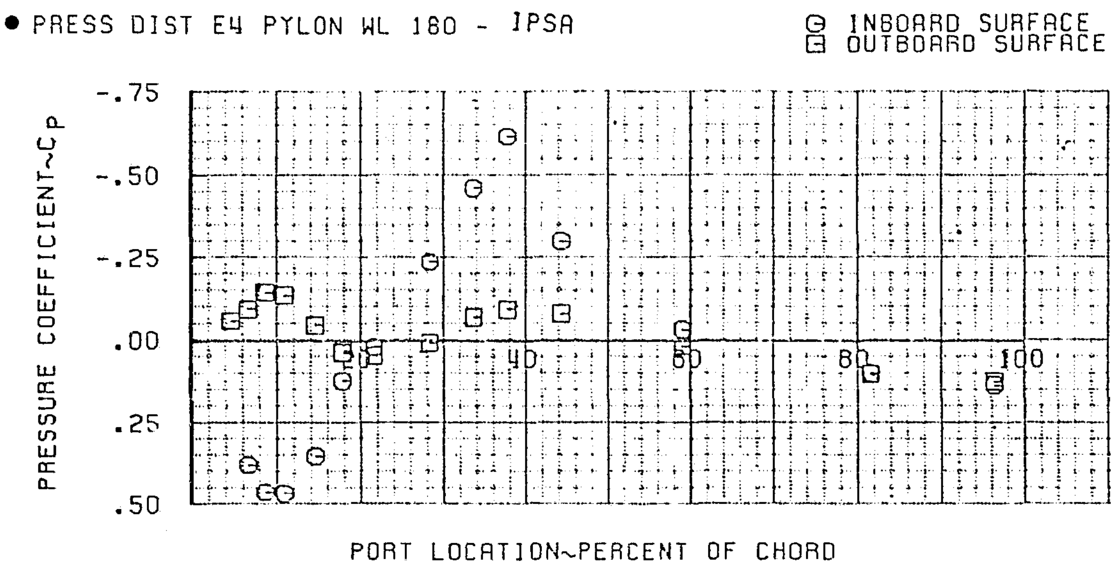


H_p	= 11 591m (38 028 ft)	M	= 0.855
GW	= 216 946 kg (478 283 lbm)	α	= 1.7 deg
Q	= 10.556 kPa (1.531 PSI)	FLAPS = 0 deg	
V_c	= 506.2 km/h (273.3 KTS)	LANDING GEAR UP	

125209-261

Figure B-7. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.001)(Continued)

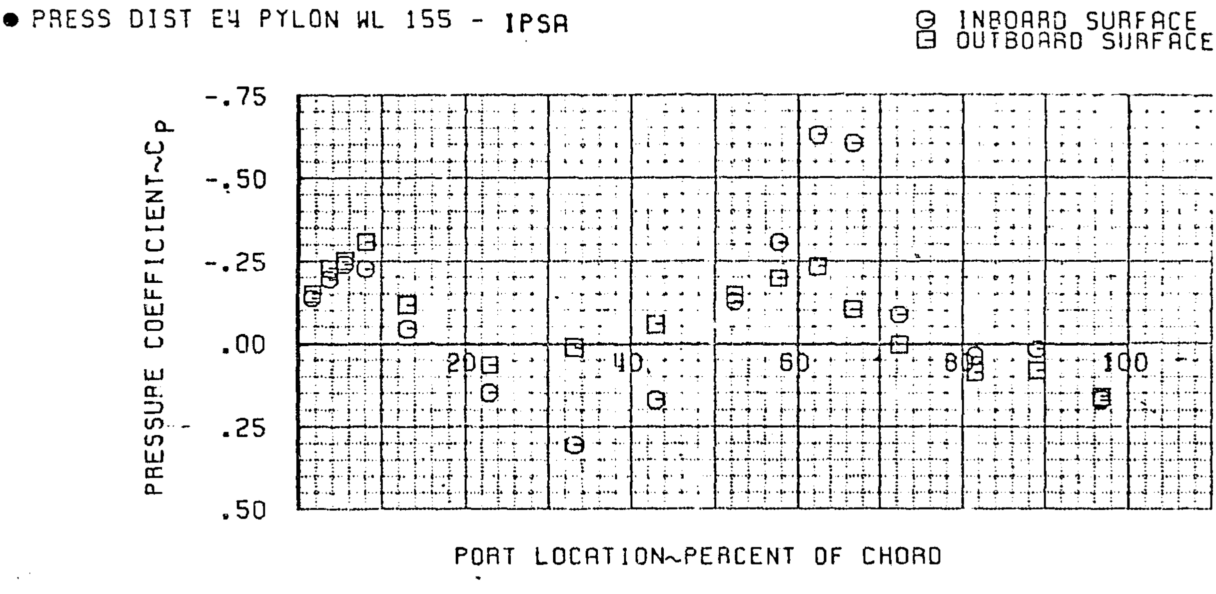


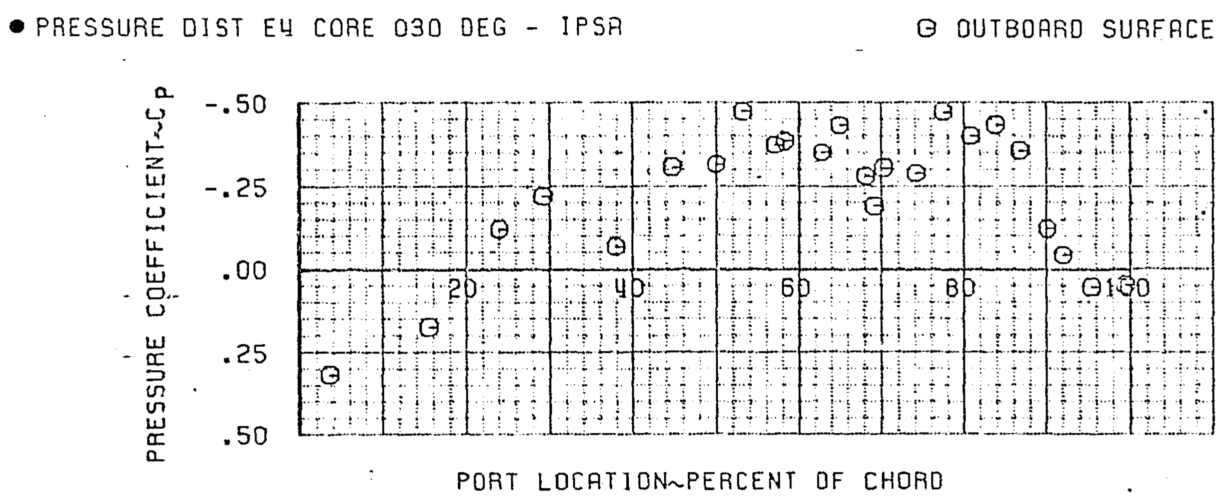


HP	=	11 591m (38 028 ft)	M	=	0.855
GW	=	216 946 kg (478 283 lbm)	α	=	1.7 deg
Q	=	10.556 kPa (1.531 PSI)	FLAPS = 0 deg		
V_c	=	506.2 km/h (273.3 KTS)	LANDING GEAR UP		

125209-262

Figure B-7. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.001)(Continued)



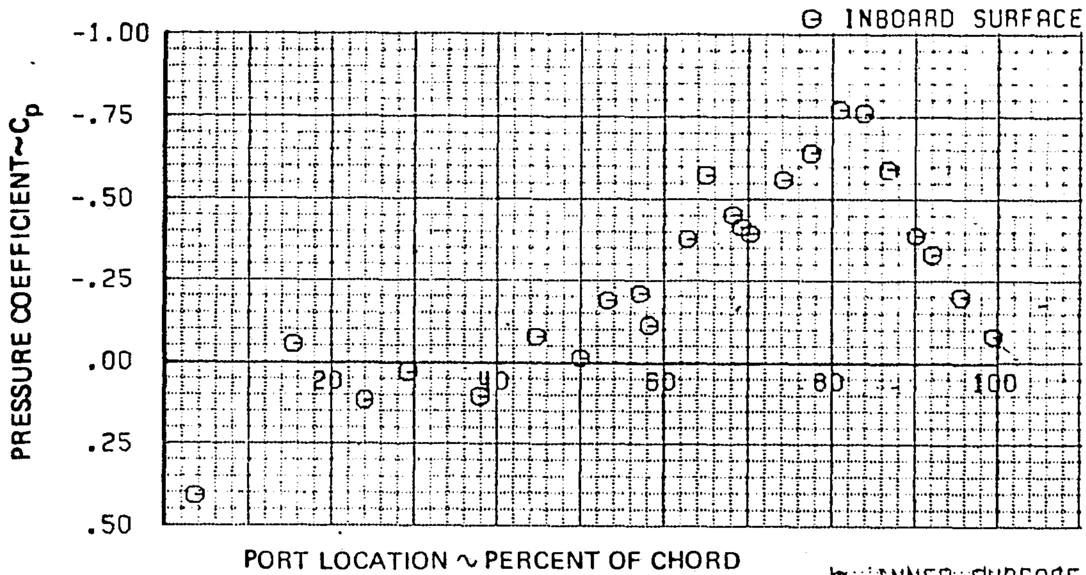


H_p	= 11 591m (38 028 ft)	M	= 0.855
GW	= 216 946 kg (478 283 lbm)	α	= 1.7 deg
Q	= 10.556 kPa (1.531 PSI)	FLAPS = 0 deg	
V_c	= 506.2 km/h (273.3 KTS)	LANDING GEAR UP	

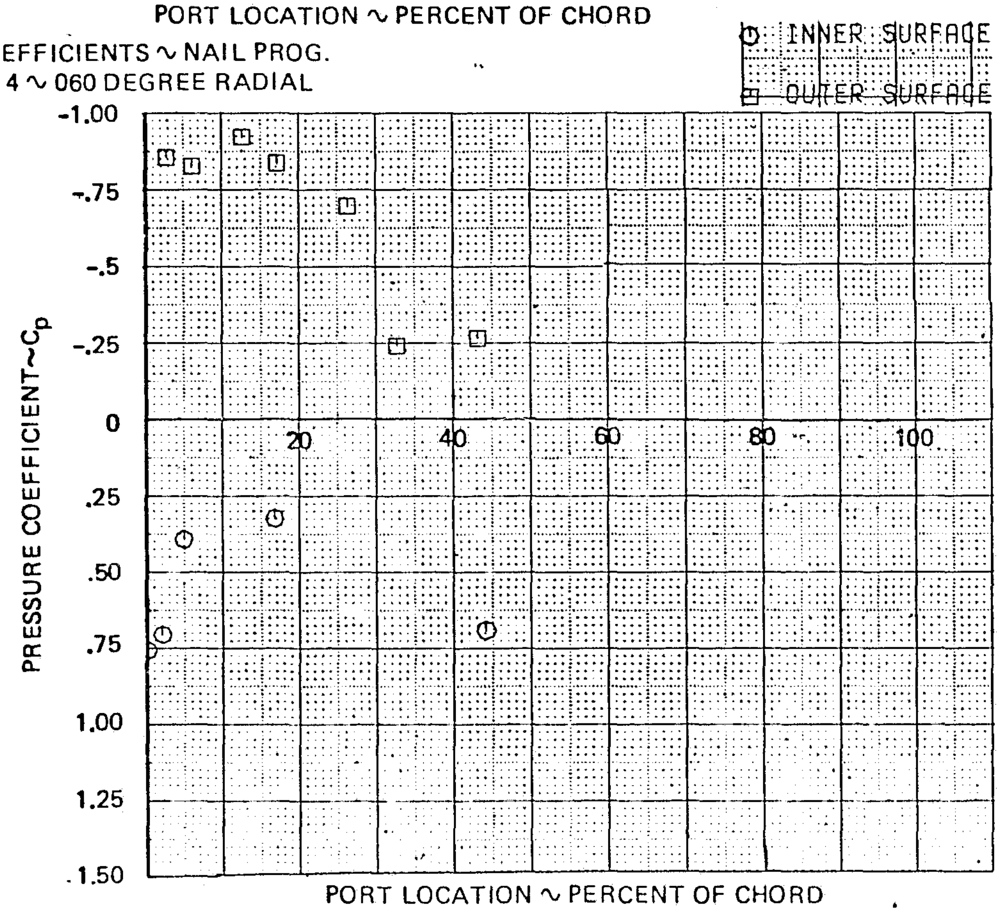
125209-263

Figure B-7. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.001)(Continued)

• PRESSURE DIST E4 CORE 330 DEG - IPSA



• PRESSURE COEFFICIENTS ∿ NAIL PROG.
ENGINE 4 ∿ 060 DEGREE RADIAL

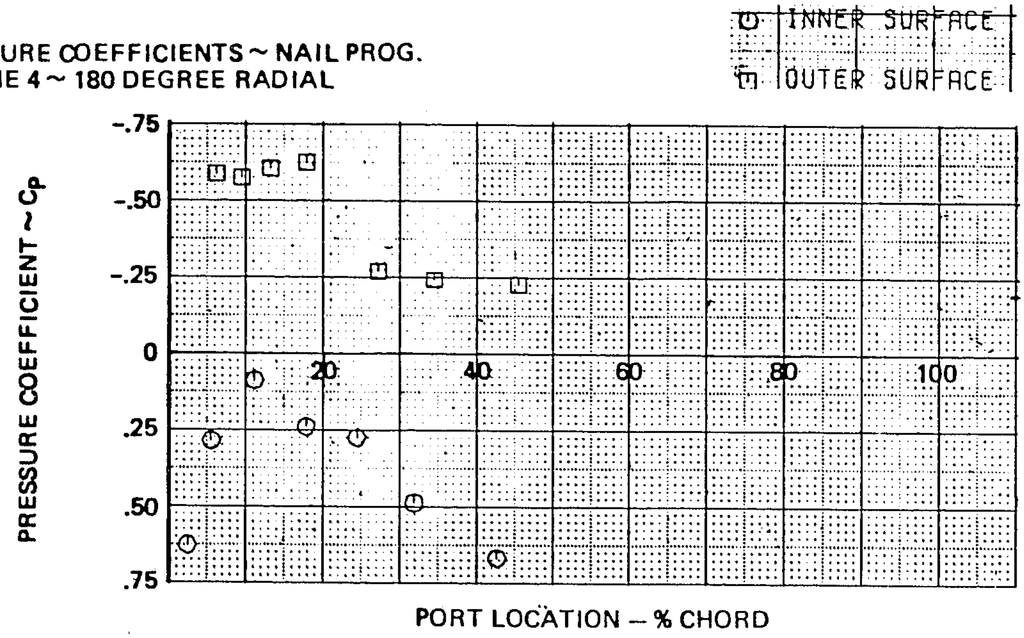


H_p	= 11 591m (38 028 ft)	M	= 0.855
GW	= 216 946 kg (478 283 lbm)	α	= 1.7 deg
Q	= 10.556 kPa (1.531 PSI)	FLAPS = 0 deg	
V_c	= 506.2 km/h (273.3 KTS)	LANDING GEAR UP	

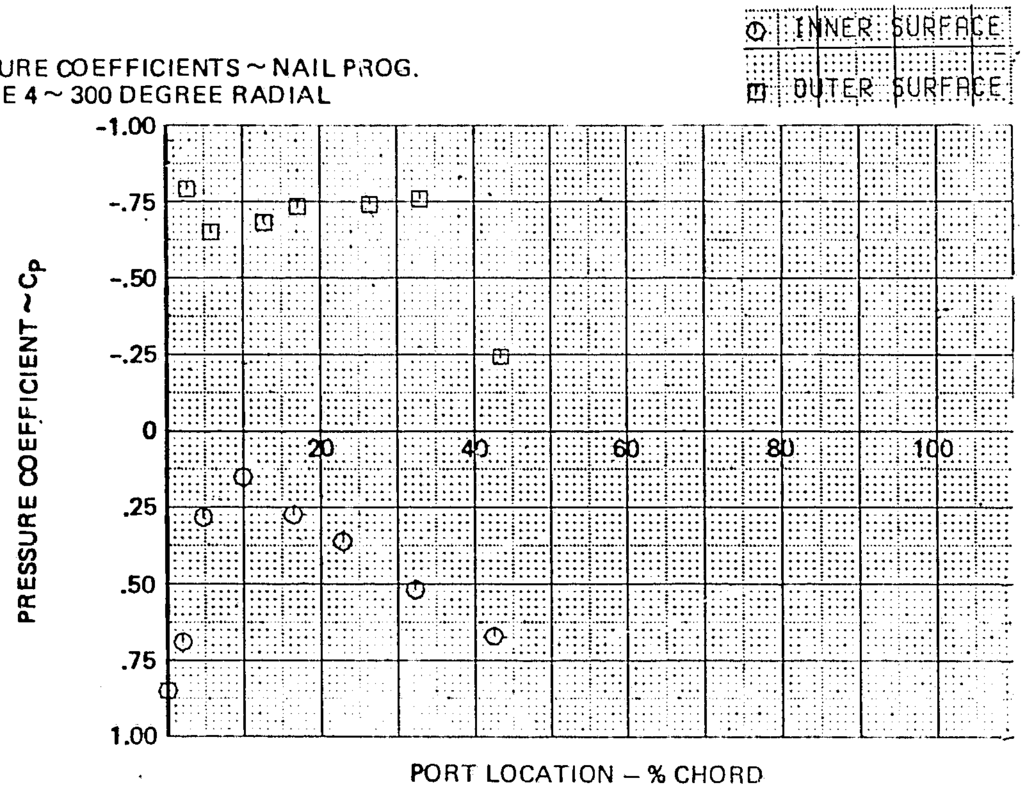
Figure B-7. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.001)(Continued)

125209-39-264

● PRESSURE COEFFICIENTS ~ NAIL PROG.
ENGINE 4 ~ 180 DEGREE RADIAL



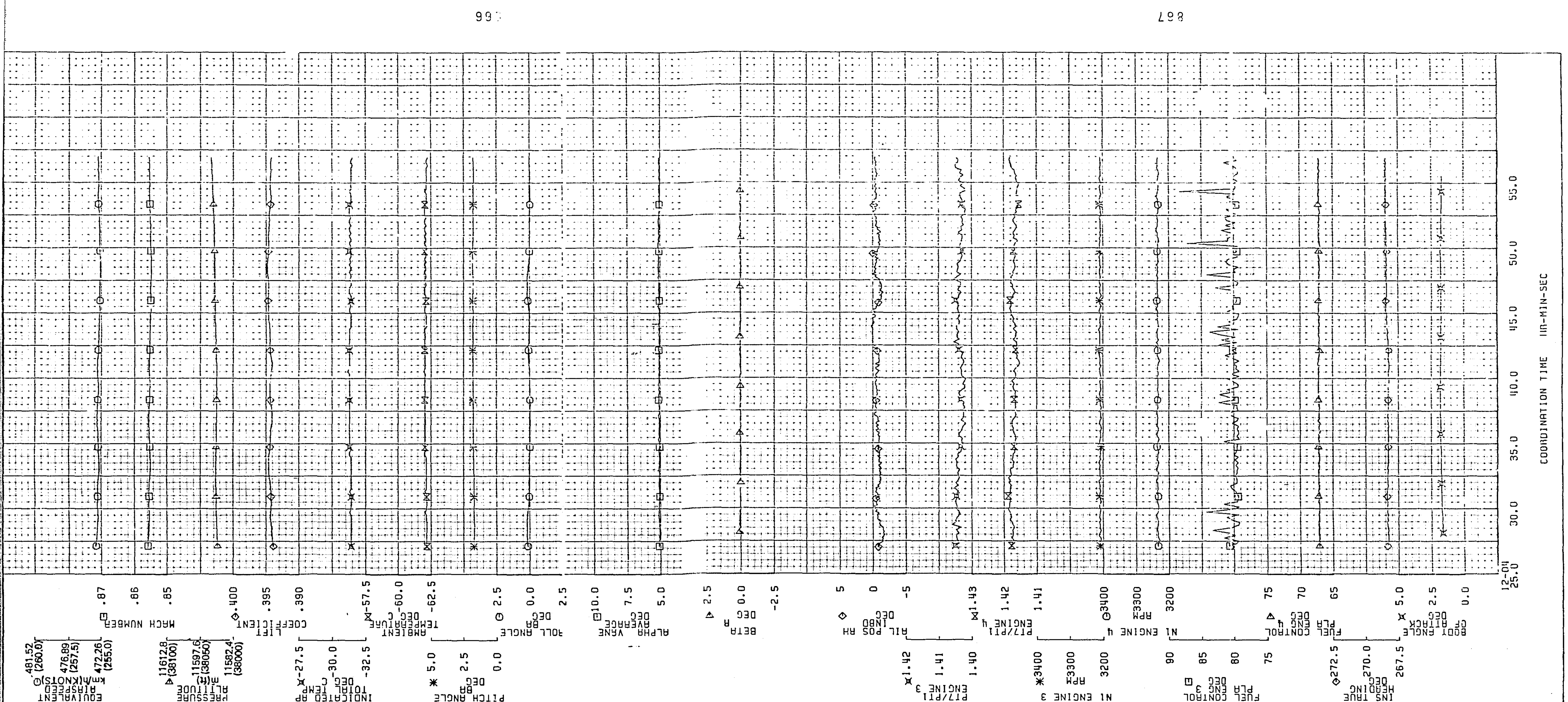
● PRESSURE COEFFICIENTS ~ NAIL PROG.
ENGINE 4 ~ 300 DEGREE RADIAL



H_p	=	11 591m (38 028 ft)	M	=	0.855
GW	=	216 946 kg (478 283 lbm)	α	=	1.7 deg
Q	=	10.556 kPa (1.531 PSI)	FLAPS = 0 deg		
V_c	=	506.2 km/h (273.3 KTS)	LANDING GEAR UP		

205209-265

Figure B-7. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.001)(Continued)

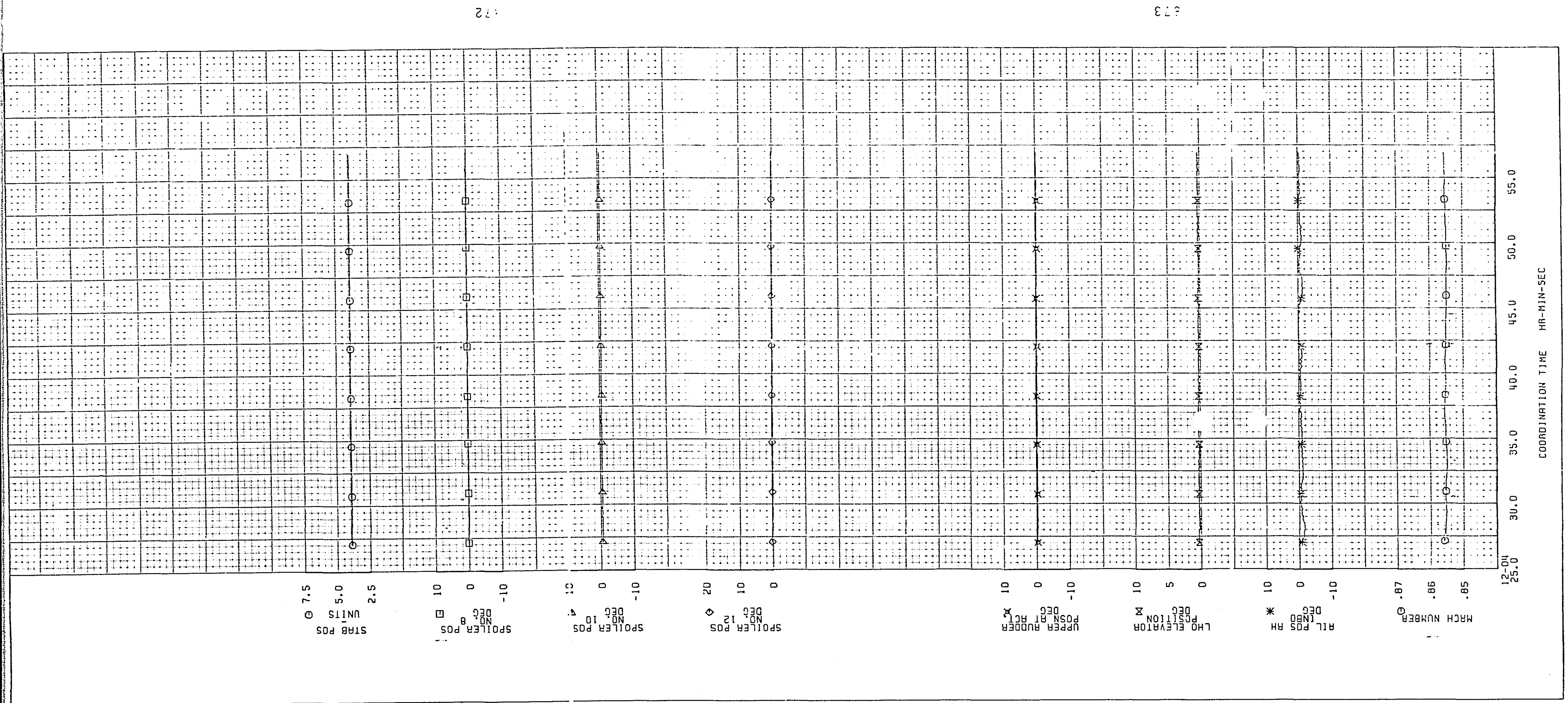


- CONDITION STABILITY

H_p	= 11 591m (38 028 ft)	M	= 0.855
GW	= 216 946 kg (478 283 lbm)	α	= 1.7 deg
Q	= 10.556 kPa (1.531 PSI)	FLAPS = 0 deg	
V_c	= 506.2 km/h (273.3 KTS)	LANDING GEAR UP	

125209-266

Figure B-7. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.001)(Continued)

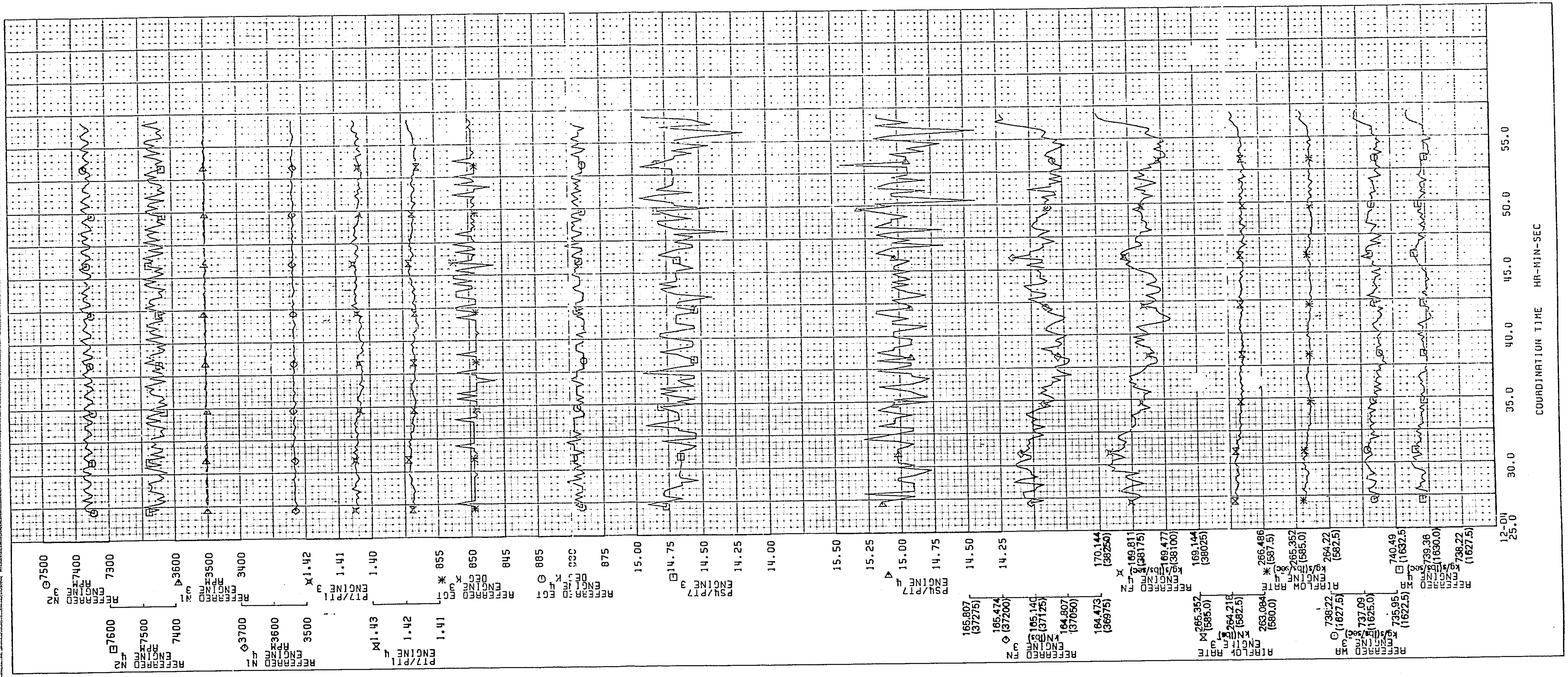


● CONTROL SURFACE POSITION

H_p	= 11 591m (38 028 ft)	M	= 0.855
GW	= 216 946 kg (478 283 lbm)	α	= 1.7 deg
Q	= 10.556 kPa (1.531 PSI)	FLAPS = 0 deg	
V_c	= 506.2 km/h (273.3 KTS)	LANDING GEAR UP	

125209-269

Figure B-7. Pressure Coefficient Plots (Test 273-15, Condition

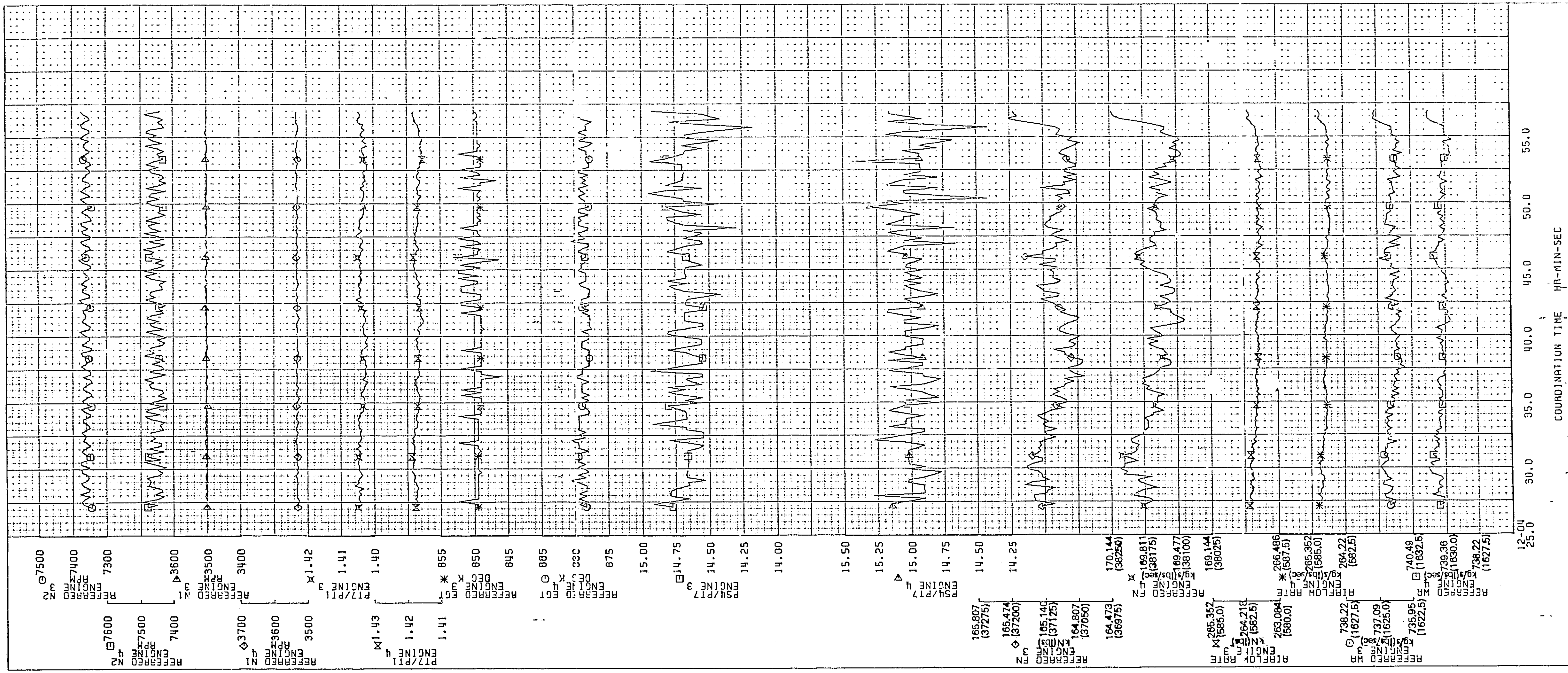


• ENGINE AIRFLOW

H_p	= 11 591m (38 028 ft)	M	= 0.855
GW	= 216 946 kg (478 283 lbm)	α	= 1.7 deg
Q	= 10.556 kPa (1.531 PSI)	FLAPS = 0 deg	
V_c	= 506.2 km/h (273.3 KTS)	LANDING GEAR UP	

126209-267

Figure B-7. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.001) (Concluded)



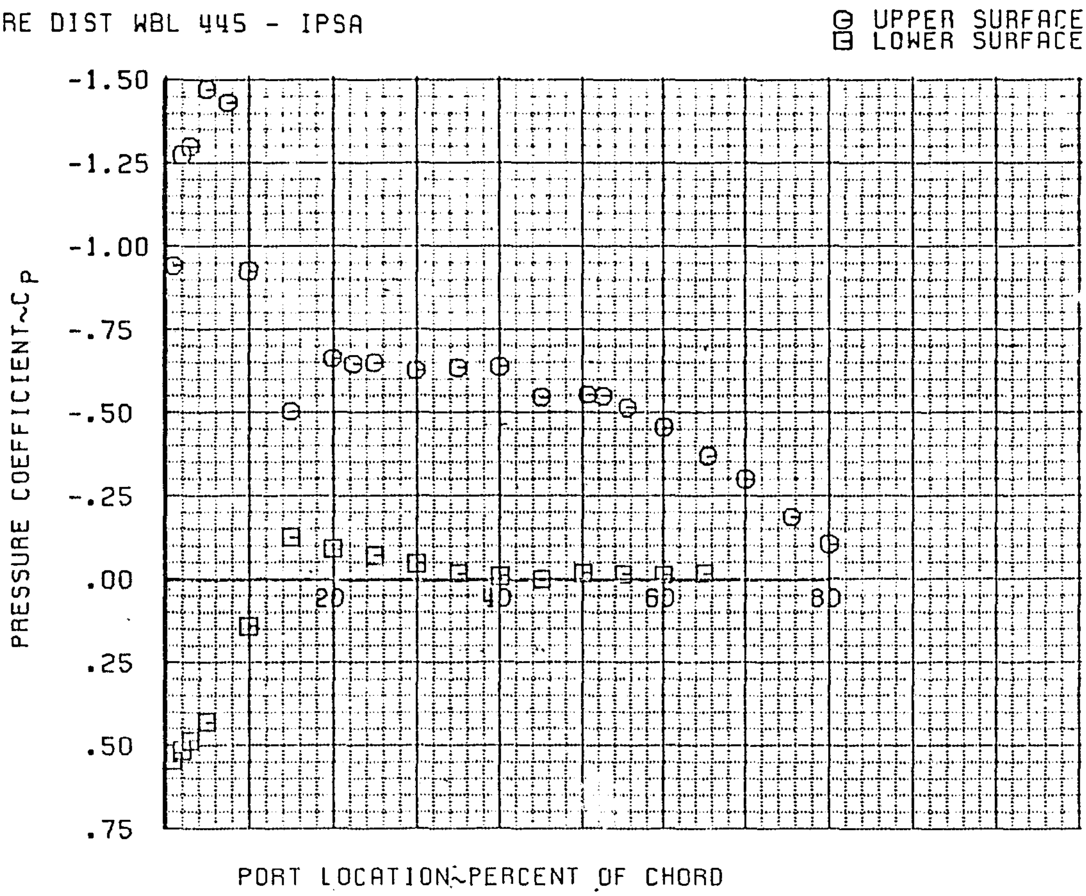
• ENGINE AIRFLOW

H_p = 11 591m (38 028 ft)		M = 0.855	
GW = 216 946 kg (478 283 lbm)		α = 1.7 deg	
Q = 10.556 kPa (1.531 PSI)		FLAPS = 0 deg	
V_c = 506.2 km/h (273.3 KTS)		LANDING GEAR UP	

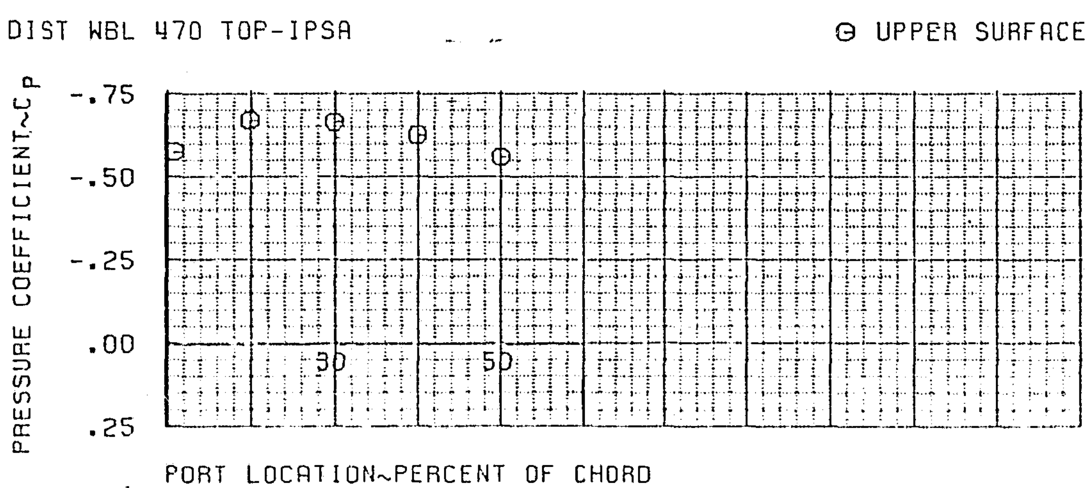
125209-267

Figure B-7. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.001) (Concluded)

● PRESSURE DIST WBL 445 - IPSA



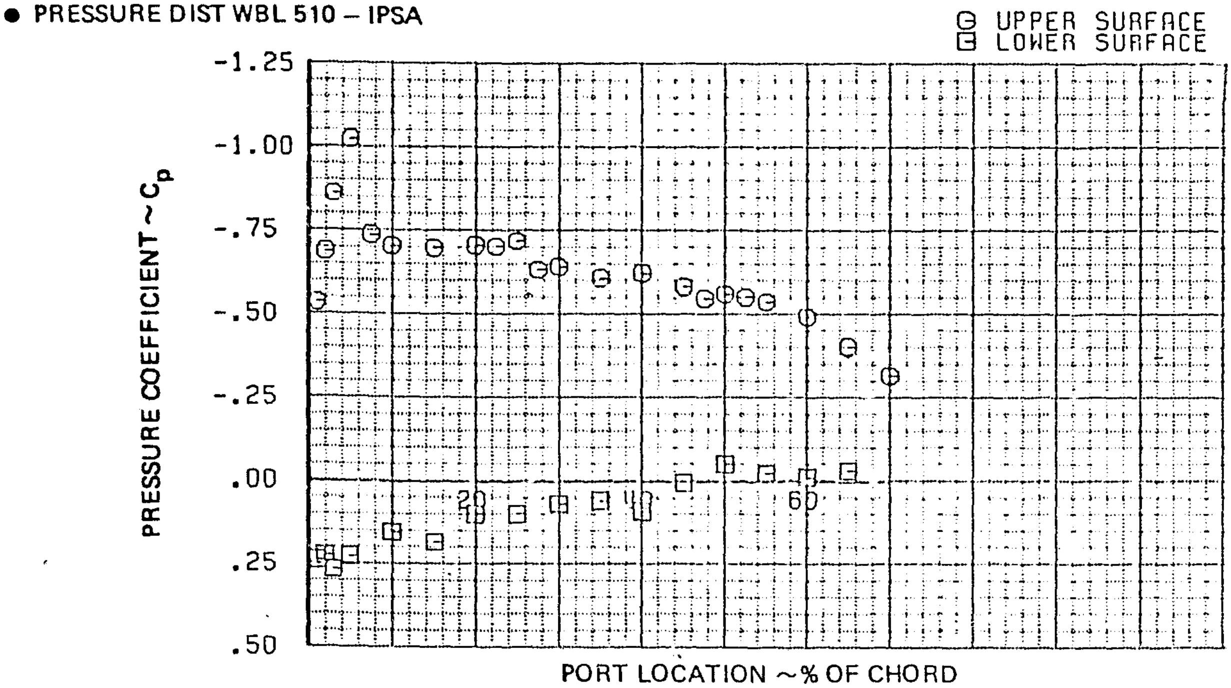
● PRESS DIST WBL 470 TOP-IPSA

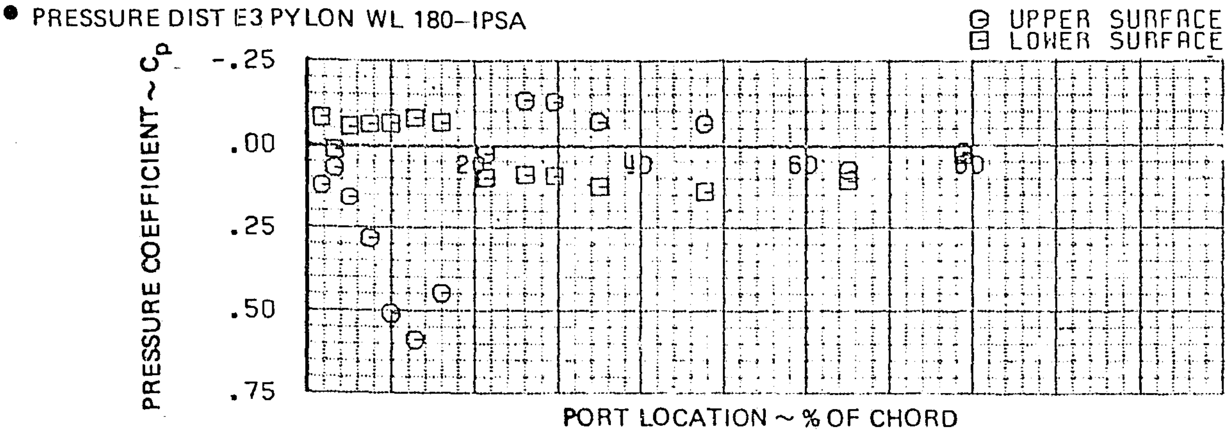


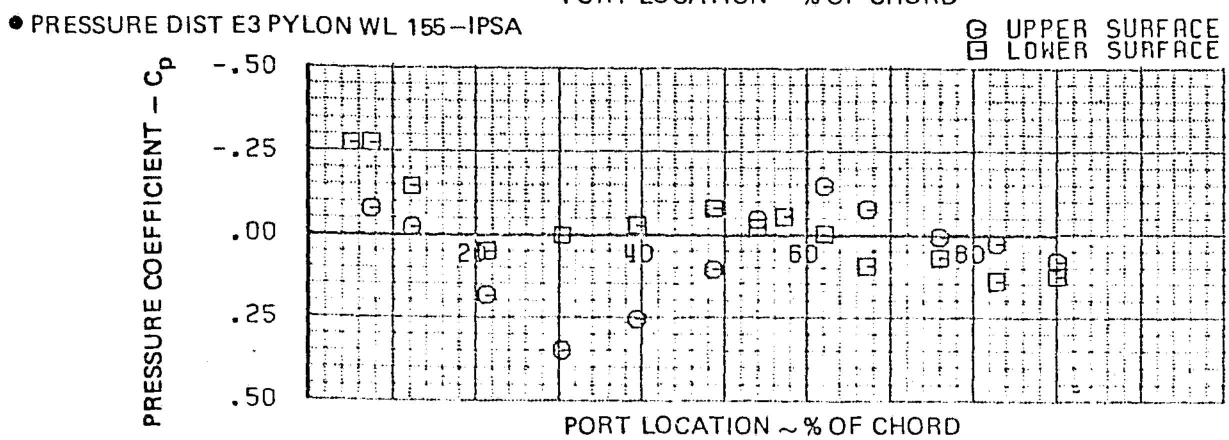
Hp	=	11 596m (38 045 ft)	M	=	0.776
GW	=	218 678 kg (482 102 lbm)	α	=	3.0 deg
Q	=	8.694 kPa (1.261 PSI)	FLAPS = 0 deg		
V_c	=	454.1 km/h (245.2 KTS)	LANDING GEAR UP		

125209-269

Figure B-8. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.002)





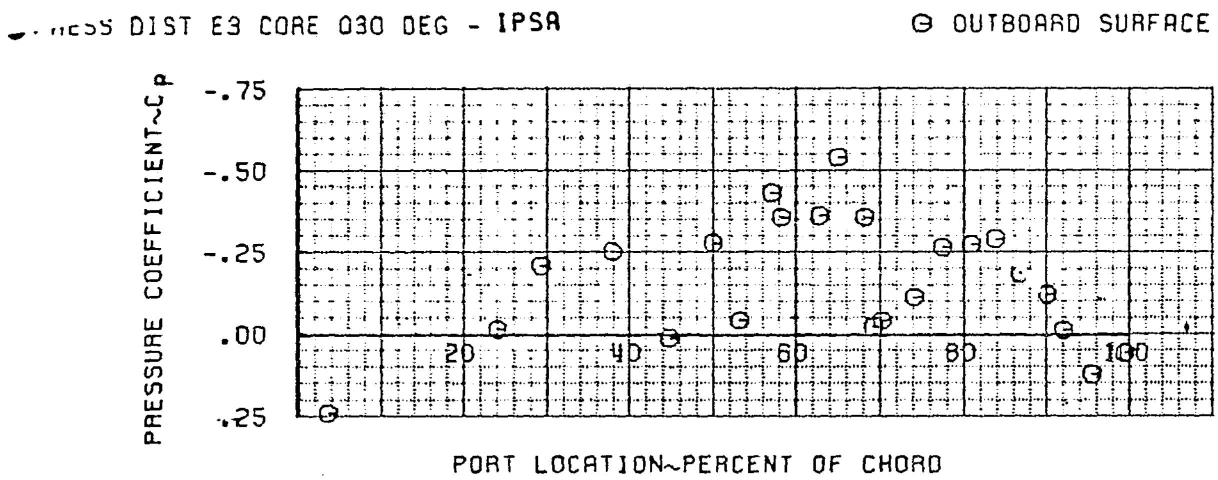


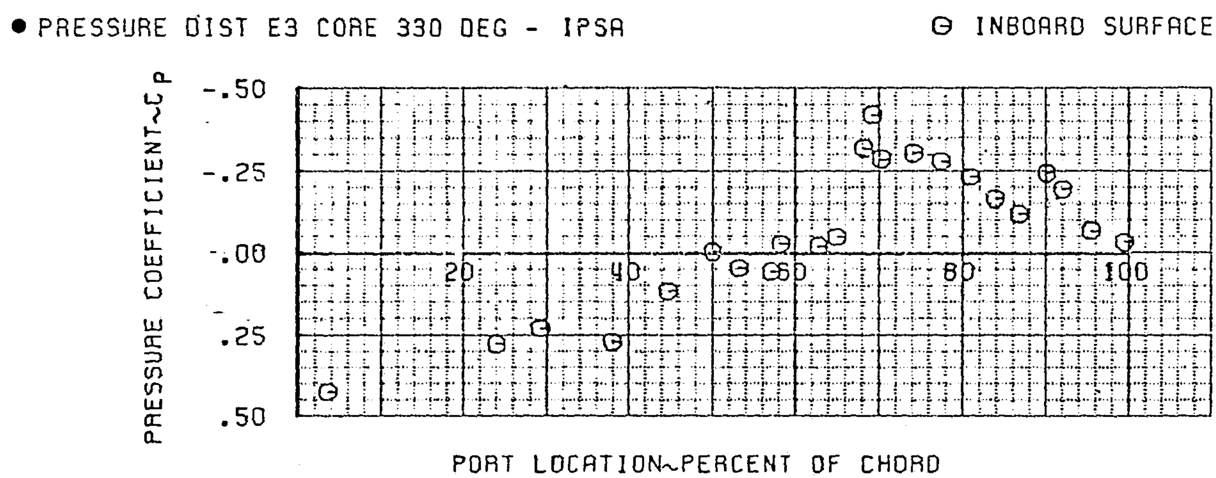
Hp	=	11 596m (38 045 ft)	M	=	0.776
GW	=	218 678 kg (482 102 lbm)	α	=	3.0 deg
Q	=	8.694 kPa (1.261 PSI)	FLAPS = 0 deg		
V_c	=	454.1 km/h (245.2 KTS)	LANDING GEAR UP		

125209-270

Figure B-8. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.002)(Continued)

~~ESS DIST E3 CORE 030 DEG - IPSA~~



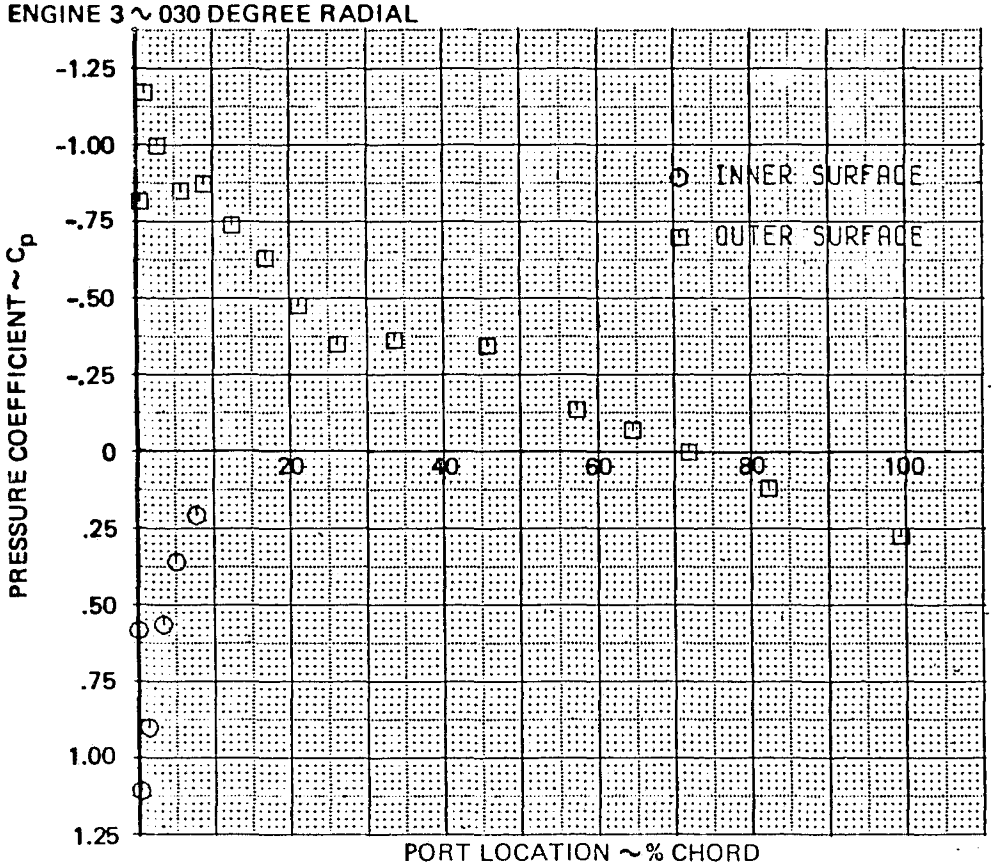


H_P	= 11 596m (38 045 ft)	M	= 0.776
GW	= 218 678 kg (482 102 lbm)	α	= 3.0 deg
Q	= 8.694 kPa (1.261 PSI)	FLAPS = 0 deg	
V_c	= 454.1 km/h (245.2 KTS)	LANDING GEAR UP	

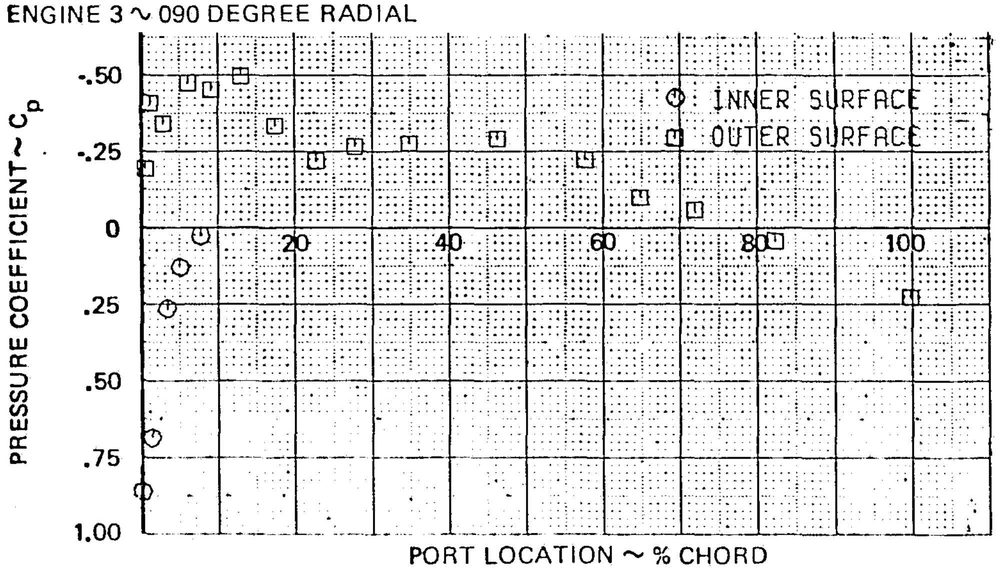
125209-271

Figure B-8. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.002)(Continued)

• PRESSURE COEFFICIENTS ∿ NAIL PROG.
ENGINE 3 ∿ 030 DEGREE RADIAL



• PRESSURE COEFFICIENTS ∿ NAIL PROG.
ENGINE 3 ∿ 090 DEGREE RADIAL

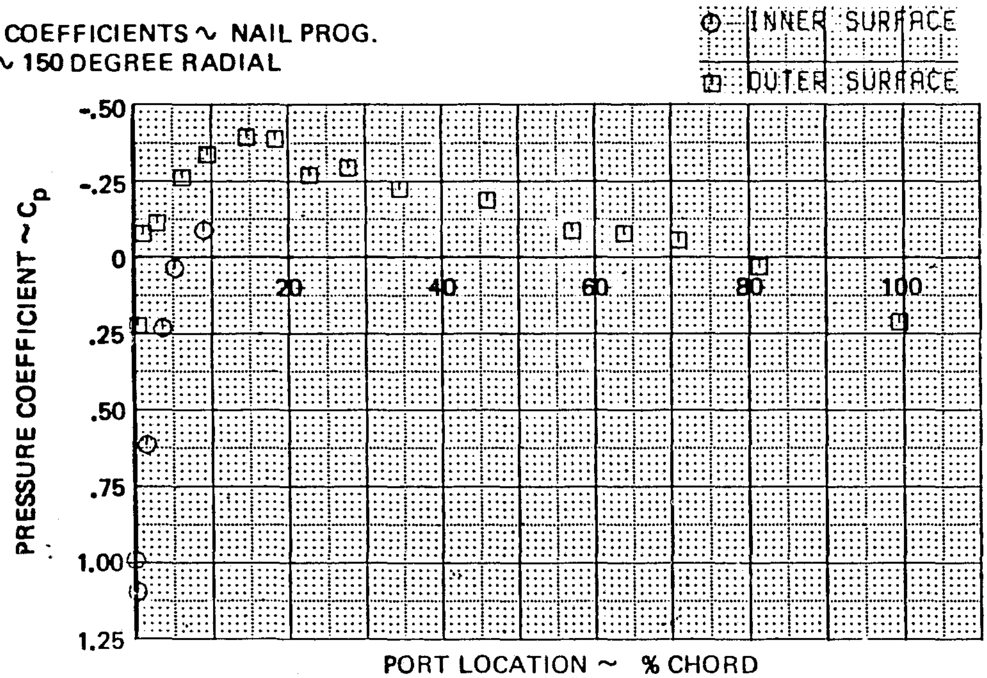


H_p	=	11 596m (38 045 ft)	M	=	0.776
GW	=	218 678 kg (482 102 lbm)	α	=	3.0 deg
Q	=	8.694 kPa (1.261 PSI)	FLAPS = 0 deg		
V_c	=	454.1 km/h (245.2 KTS)	LANDING GEAR UP		

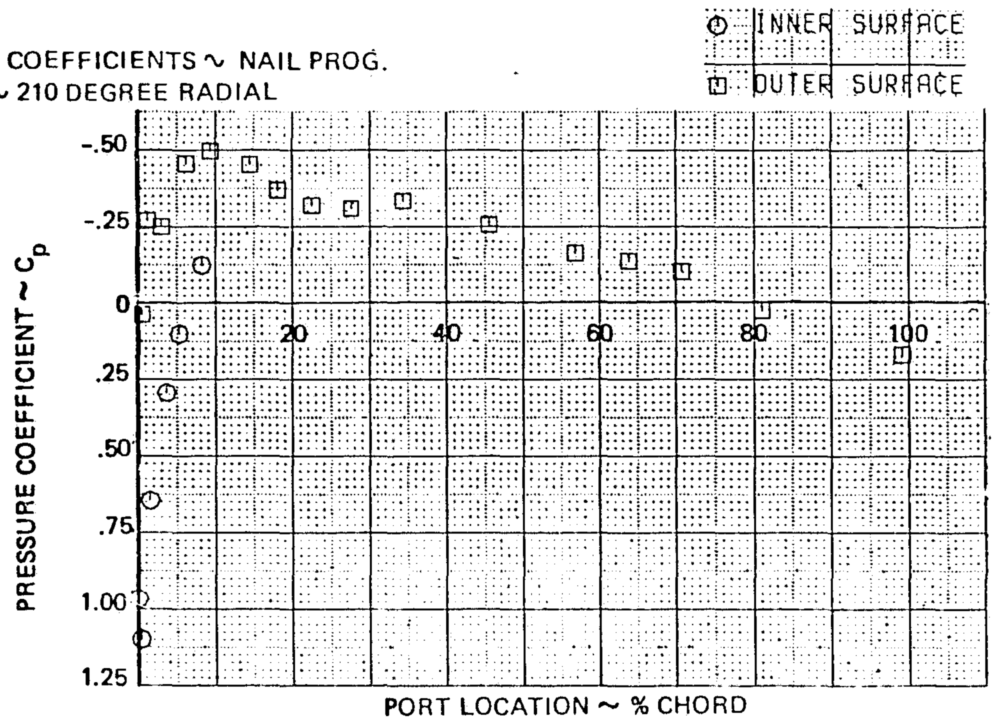
125209-272

Figure B-8. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.002)(Continued)

• PRESSURE COEFFICIENTS ~ NAIL PROG.
ENGINE 3 ~ 150 DEGREE RADIAL



• PRESSURE COEFFICIENTS ~ NAIL PROG.
ENGINE 3 ~ 210 DEGREE RADIAL

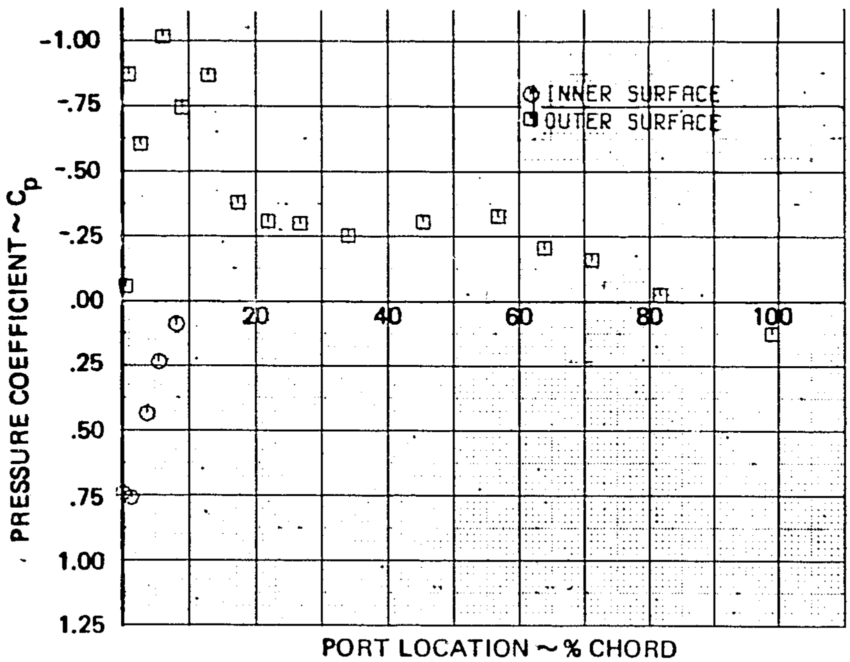


H_p	=	11 596m (38 045 ft)	M	=	0.776
GW	=	218 678 kg (482 102 lbm)	α	=	3.0 deg
Q	=	8.694 kPa (1.261 PSI)	FLAPS = 0 deg		
V_c	=	454.1 km/h (245.2 KTS)	LANDING GEAR UP		

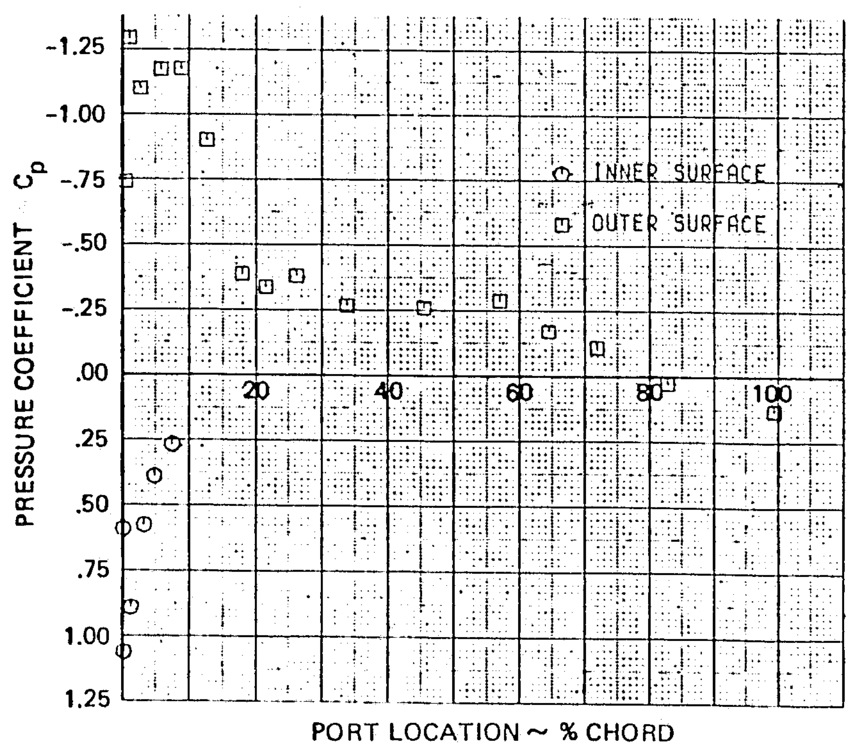
125209-273

Figure B-8. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.002)(Continued)

• ENGINE 3–270 DEGREE RADIAL ~ NAIL



• ENGINE 3–330 DEGREE RADIAL ~ NAIL

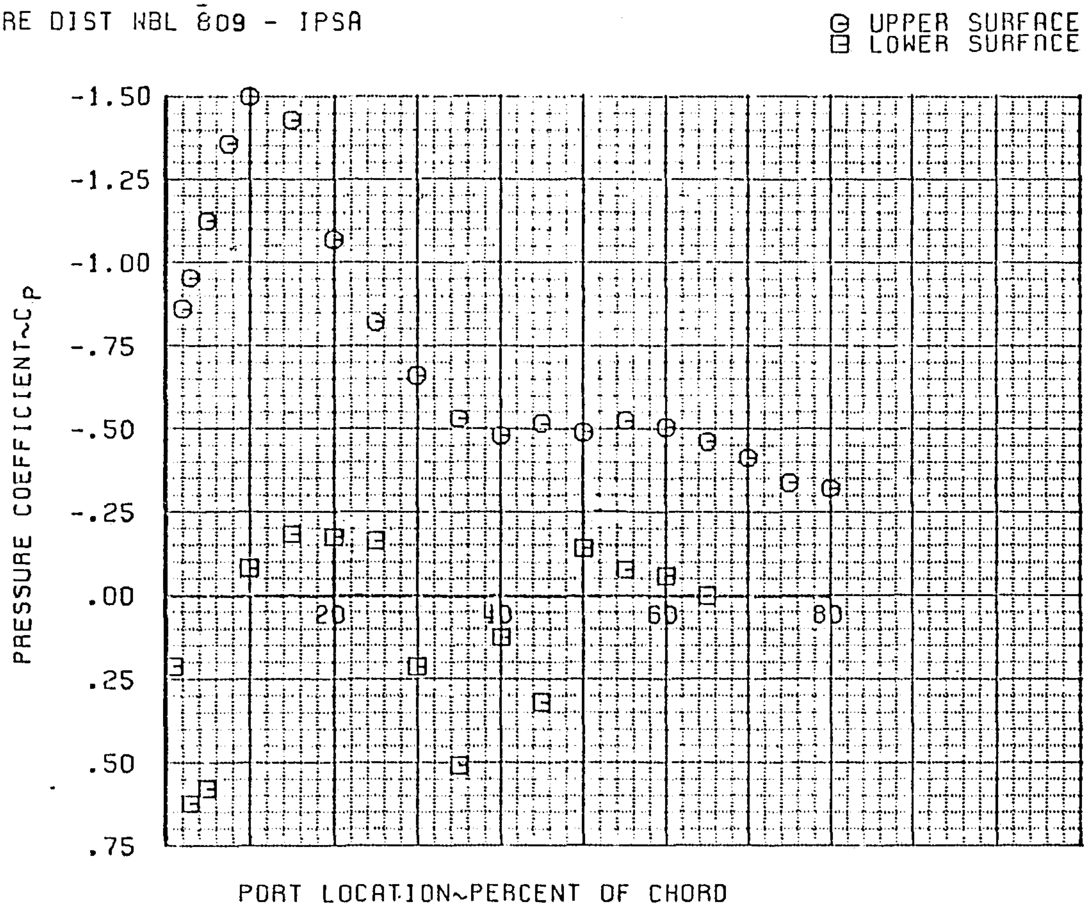


Hp	=	11 596m (38 045 ft)	M	=	0.776
GW	=	218 678 kg (482 102 lbm)	α	=	3.0 deg
Q	=	8.694 kPa (1.261 PSI)	FLAPS = 0 deg		
V_c	=	454.1 km/h (245.2 KTS)	LANDING GEAR UP		

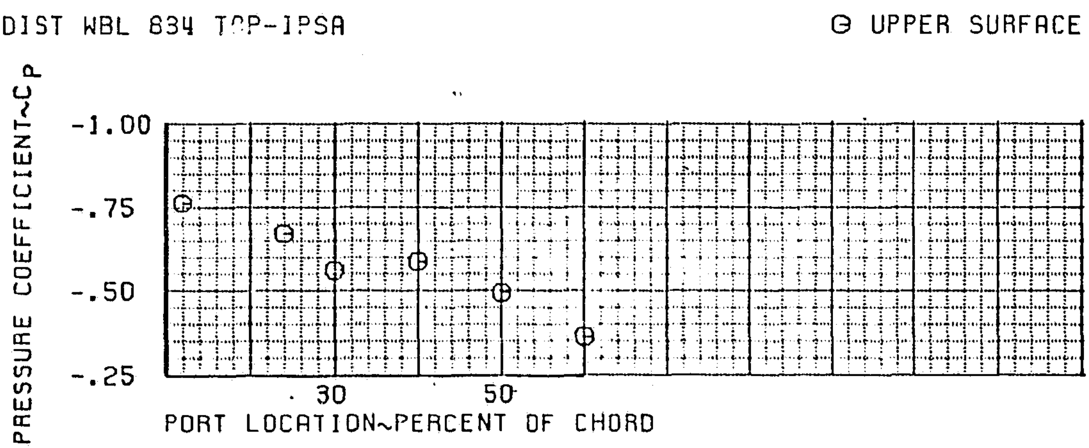
125209-274

Figure B-8. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.002)(Continued)

● PRESSURE DIST WBL 809 - IPSA



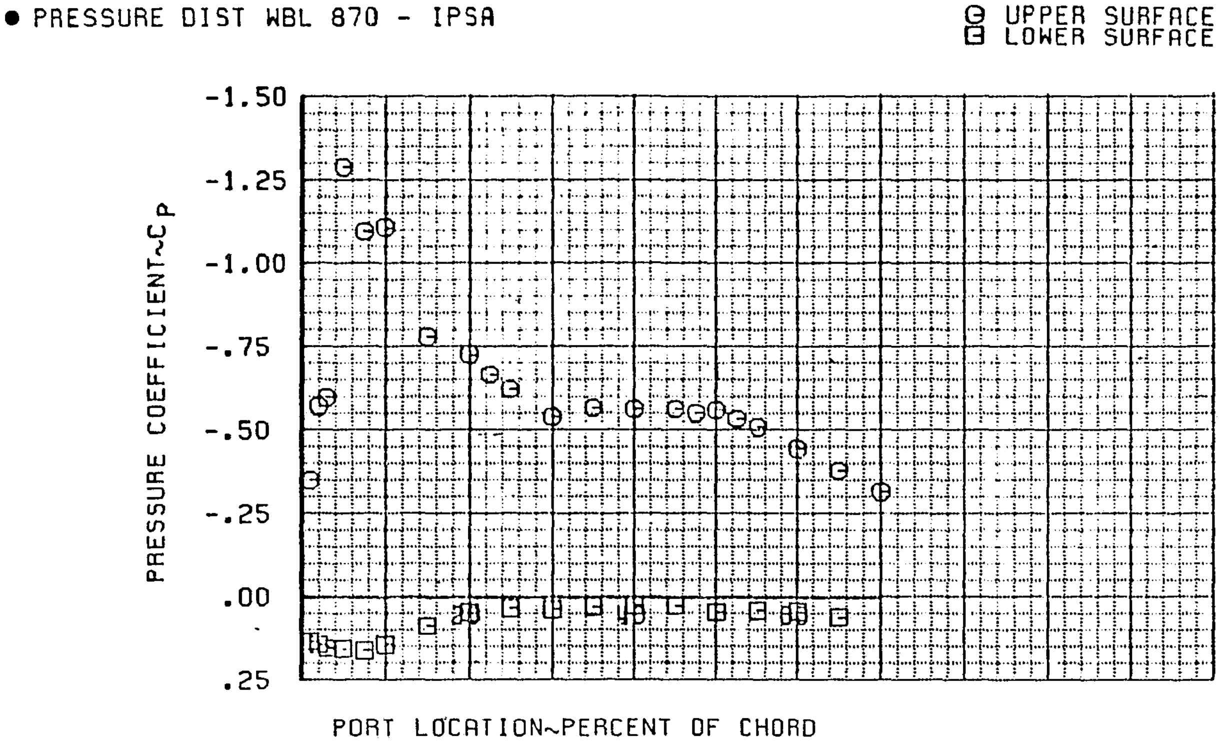
● PRESS DIST WBL 834 TOP-IPSA

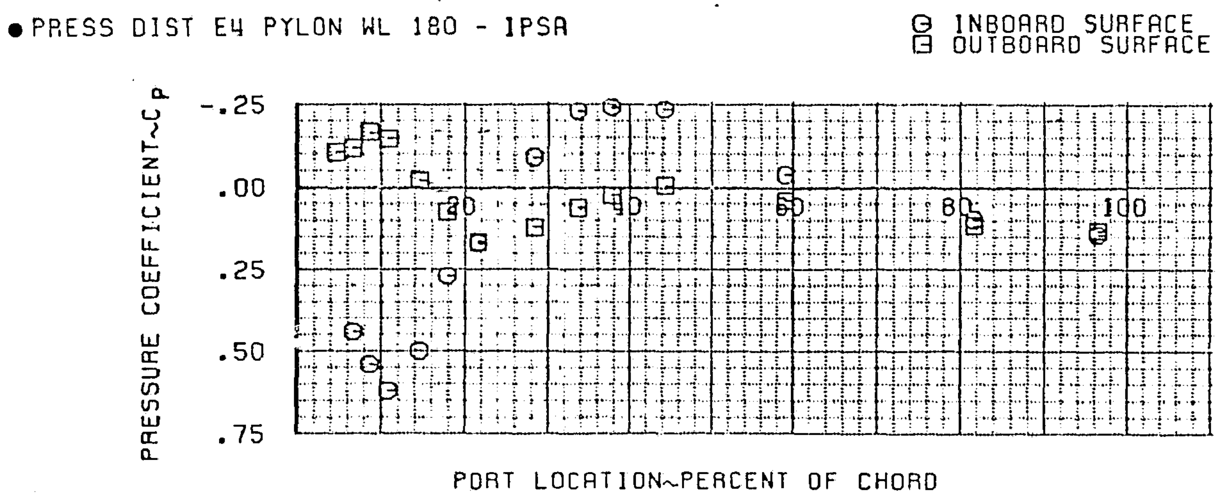


H_P	=	11 596m (38 045 ft)	M	=	0.776
GW	=	218 678 kg (482 102 lbm)	α	=	3.0 deg
Q	=	8.694 kPa (1.261 PSI)	FLAPS = 0 deg		
V_c	=	454.1 km/h (245.2 KTS)	LANDING GEAR UP		

125209-275

Figure B-8. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.002)(Continued)

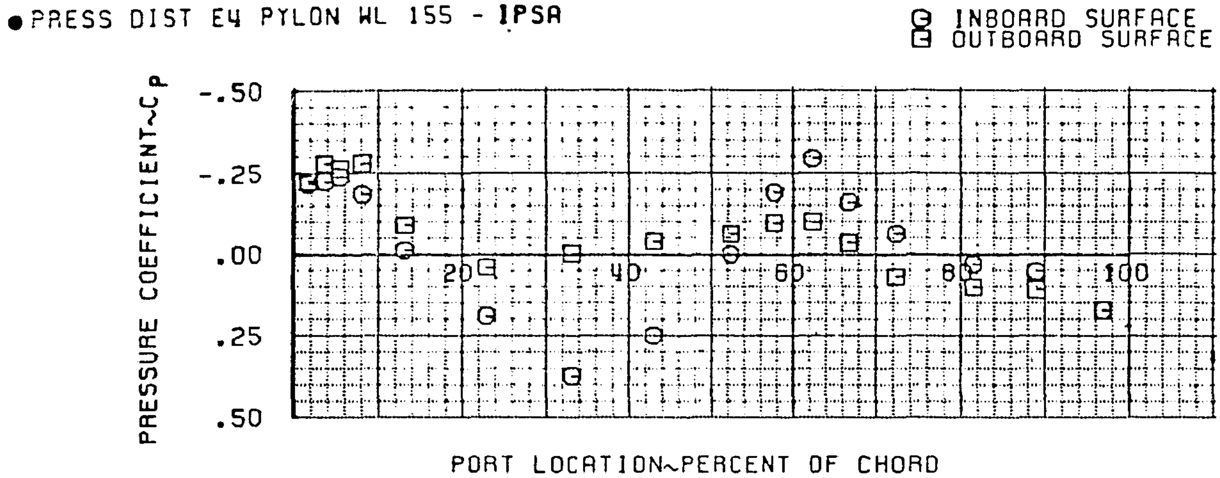


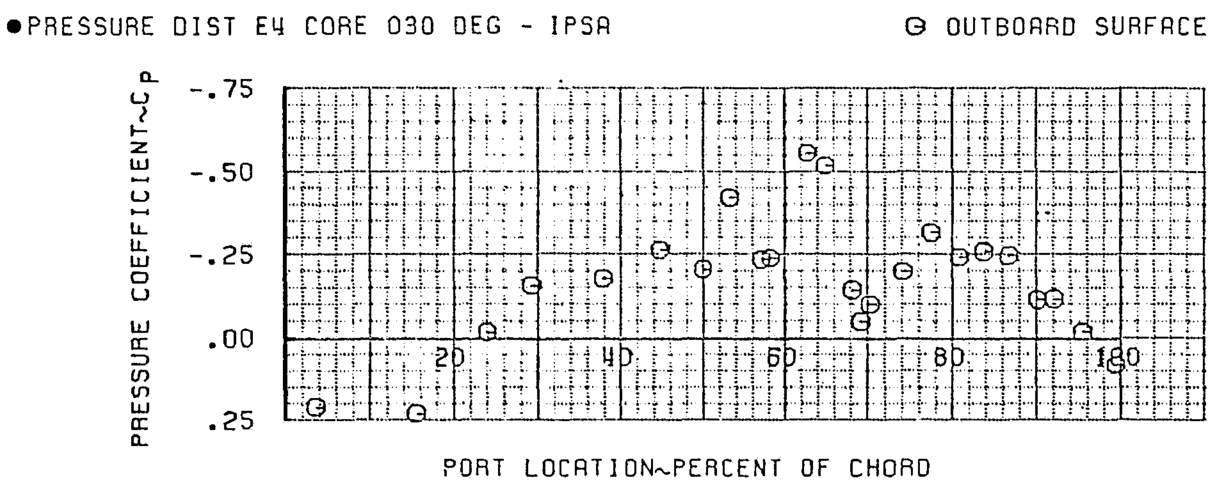


Hp	= 11 596m (38 045 ft)	M	= 0.776
GW	= 218 678 kg (482 102 lbm)	α	= 3.0 deg
Q	= 8.694 kPa (1.261 PSI)	FLAPS = 0 deg	
V_c	= 454 1 km/h (245.2 KTS)	LANDING GEAR UP	

125209-276

Figure B-8. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.002)(Continued)

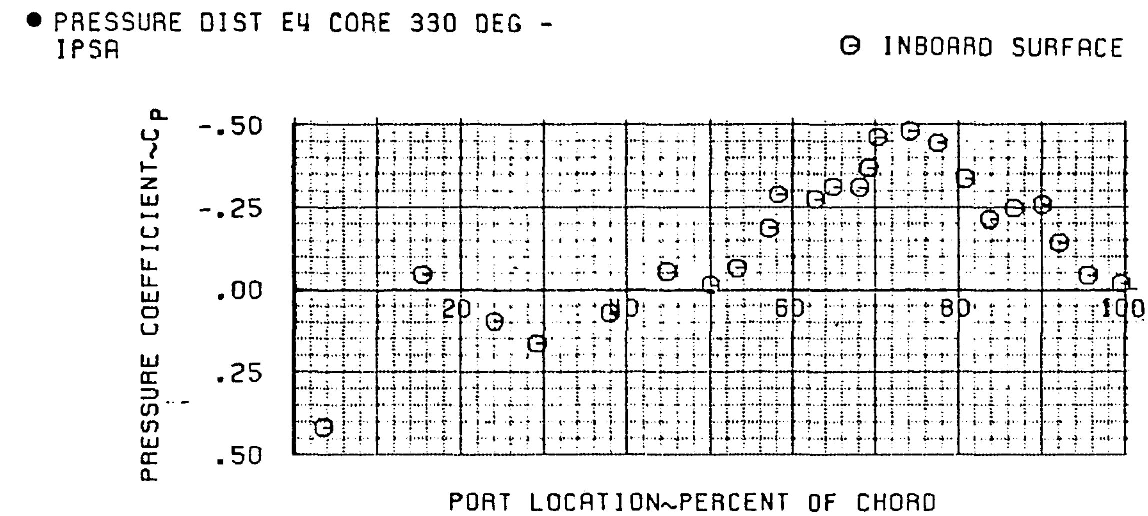


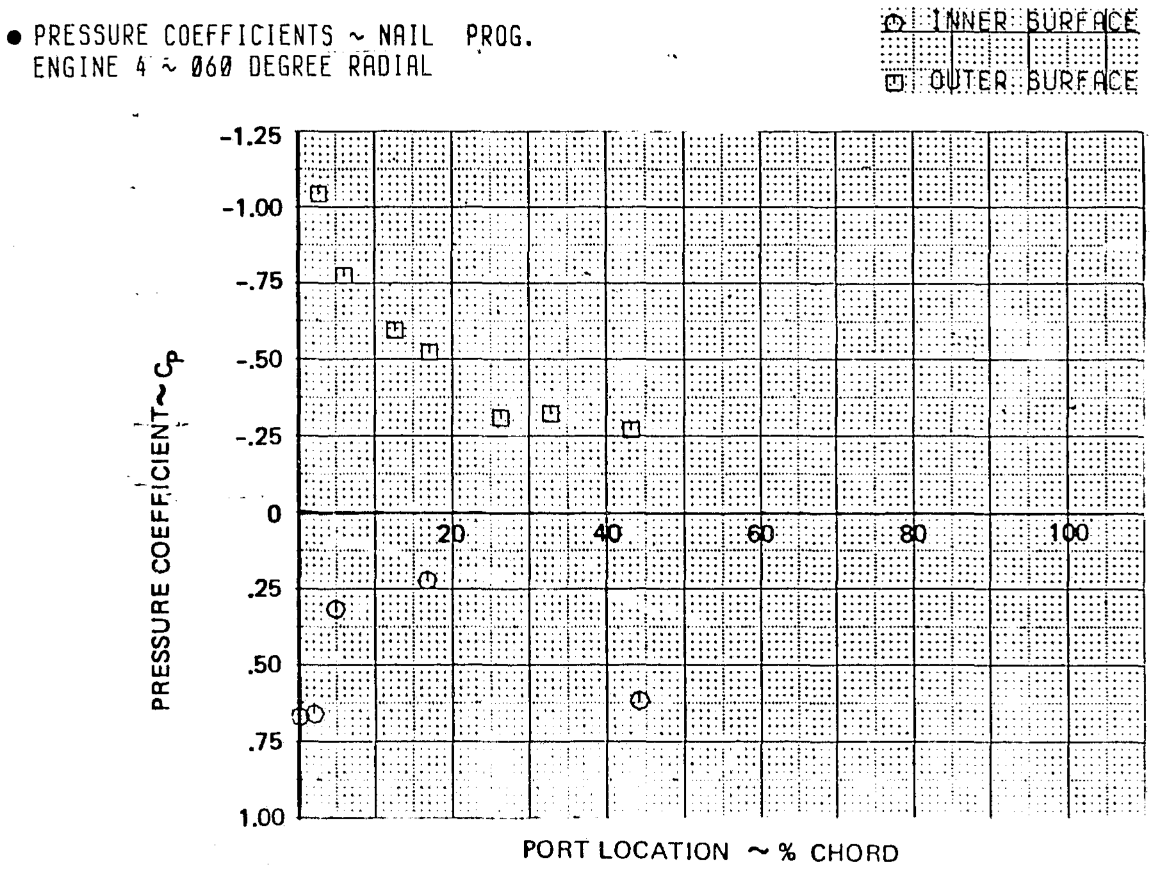


H_p	= 11 596m (38 045 ft)	M	= 0.776
GW	= 218 678 kg (482 102 lbm)	α	= 3.0 deg
Q	= 8.649 kPa (1.261 PSI)	FLAPS = 0 deg	
V_c	= 454.1 km/h (245.2 KTS)	LANDING GEAR UP	

125209-277

Figure B-8. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.002)(Continued)



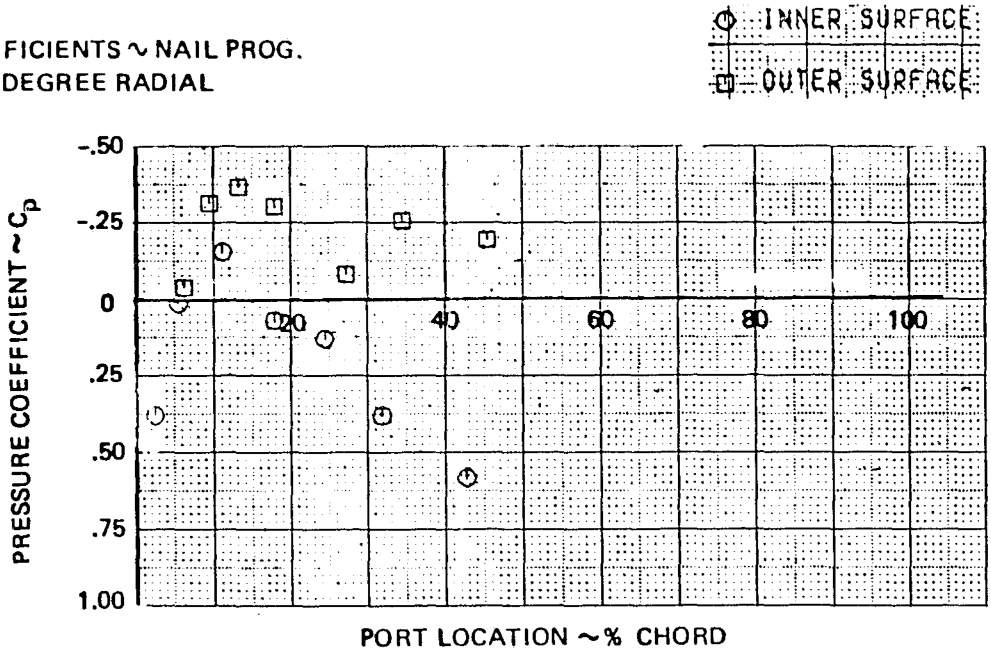


Hp	= 11 596m (38 045 ft)	M	= 0.776
GW	= 218 678 kg (482 102 lbm)	α	= 3.0 deg
Q	= 8.694 kPa (1.261 PSI)	FLAPS = 0 deg	
V_c	= 454.1 km/h (245.2 KTS)	LANDING GEAR UP	

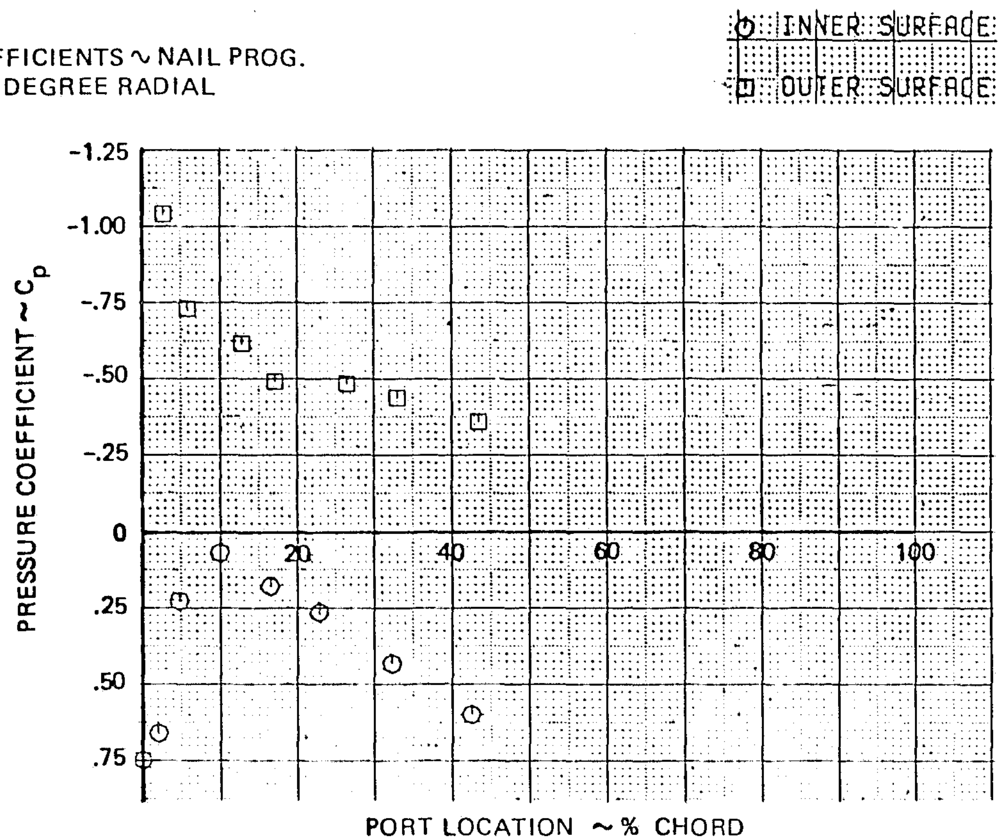
125209-278

Figure B-8. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.002)(Continued)

● PRESSURE COEFFICIENTS ∿ NAIL PROG.
ENGINE 4 ∿ 180 DEGREE RADIAL



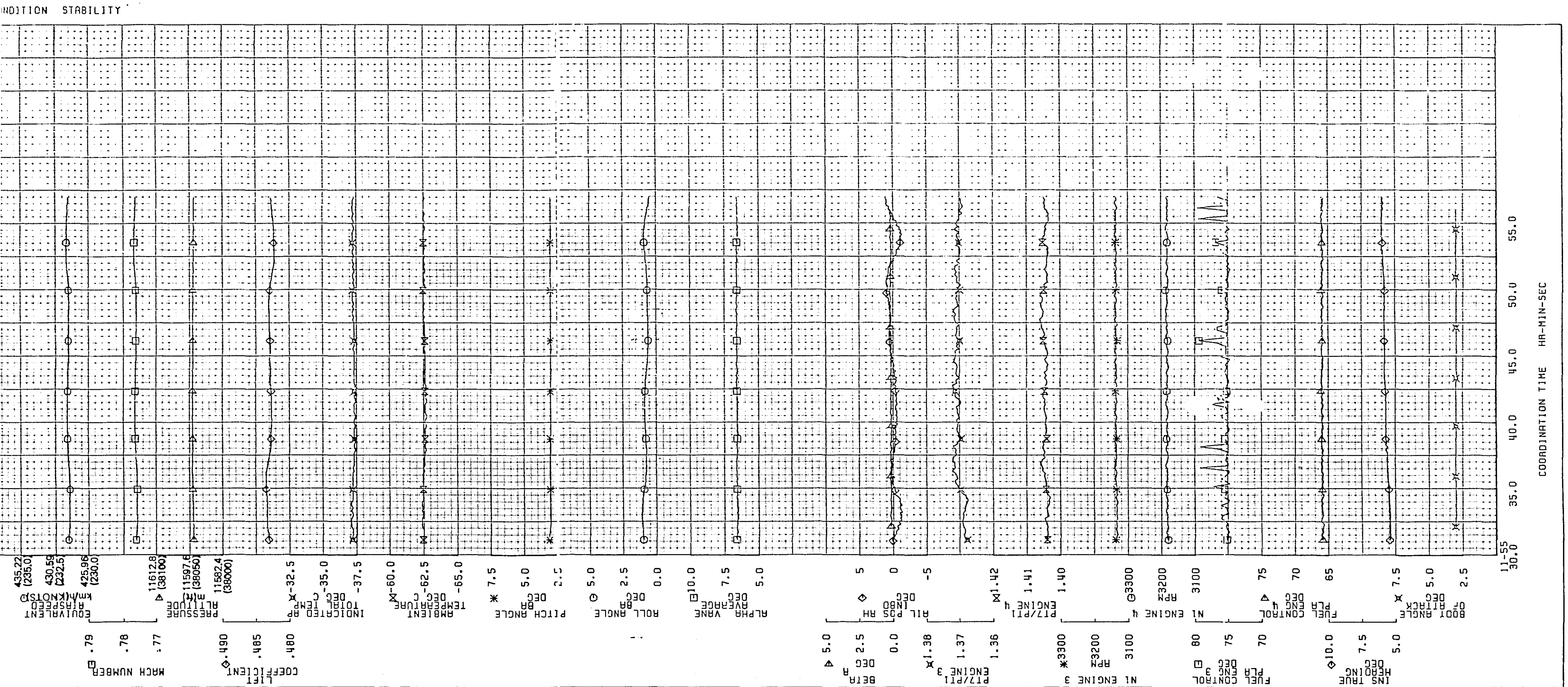
● PRESSURE COEFFICIENTS ∿ NAIL PROG.
ENGINE 4 ∿ 300 DEGREE RADIAL



H_P	=	11 596m (38 045 ft)	M	=	0.776
GW	=	218 678 kg (482 102 lbm)	α	=	3.0 deg
Q	=	8.694 kPa (1.261 PSI)	FLAPS = 0 deg		
V_c	=	454.1 km/h (245.2 KTS)	LANDING GEAR UP		

125209-279

Figure B-8. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.002)(Continued)

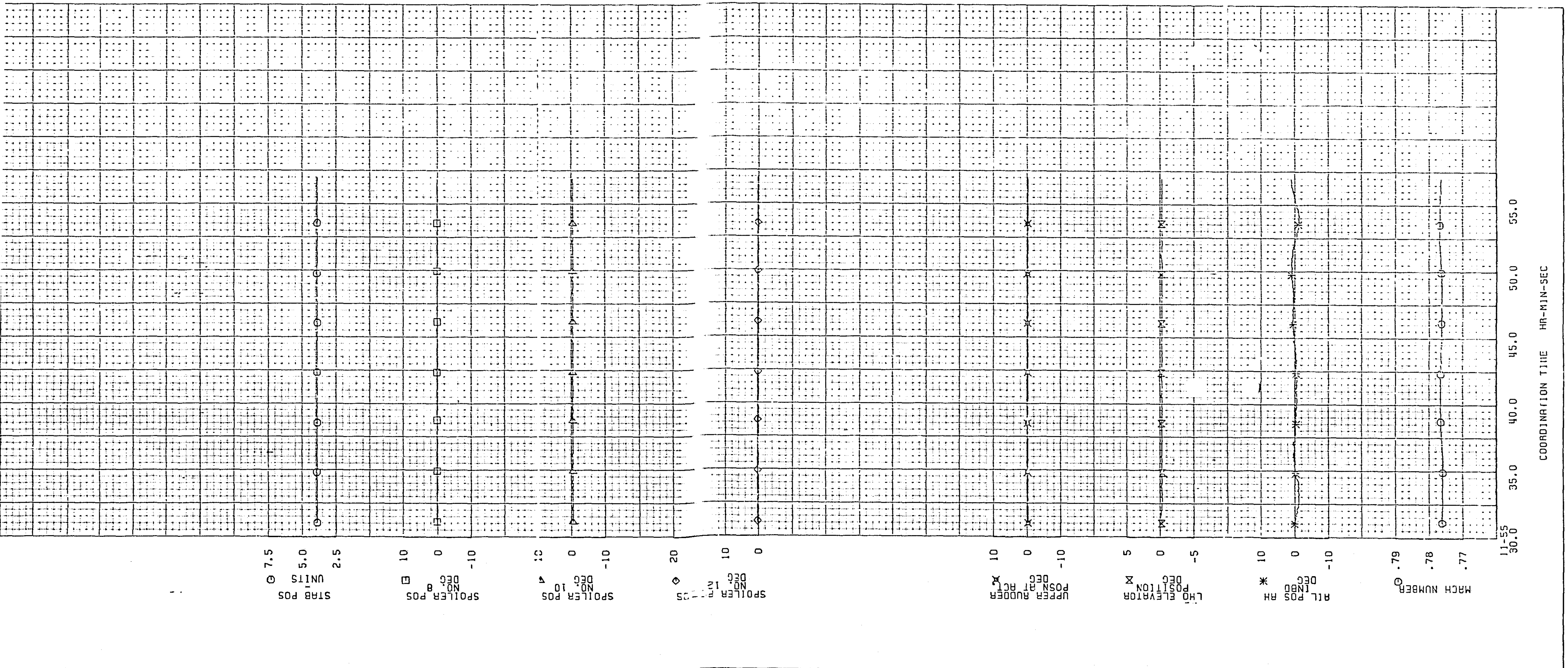


• CONDITION STABILITY

H_p	= 11 596m (38 045 ft)	M	= 0.776
GW	= 218 678 kg (482 102 lbm)	α	= 3.0 deg
Q	= 8.694 kPa (1.261 PSI)	FLAPS = 0 deg	
V_c	= 454.1 km/h (245.2 KTS)	LANDING GEAR UP	

Figure B-8. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.002)(Continued)

125209-280

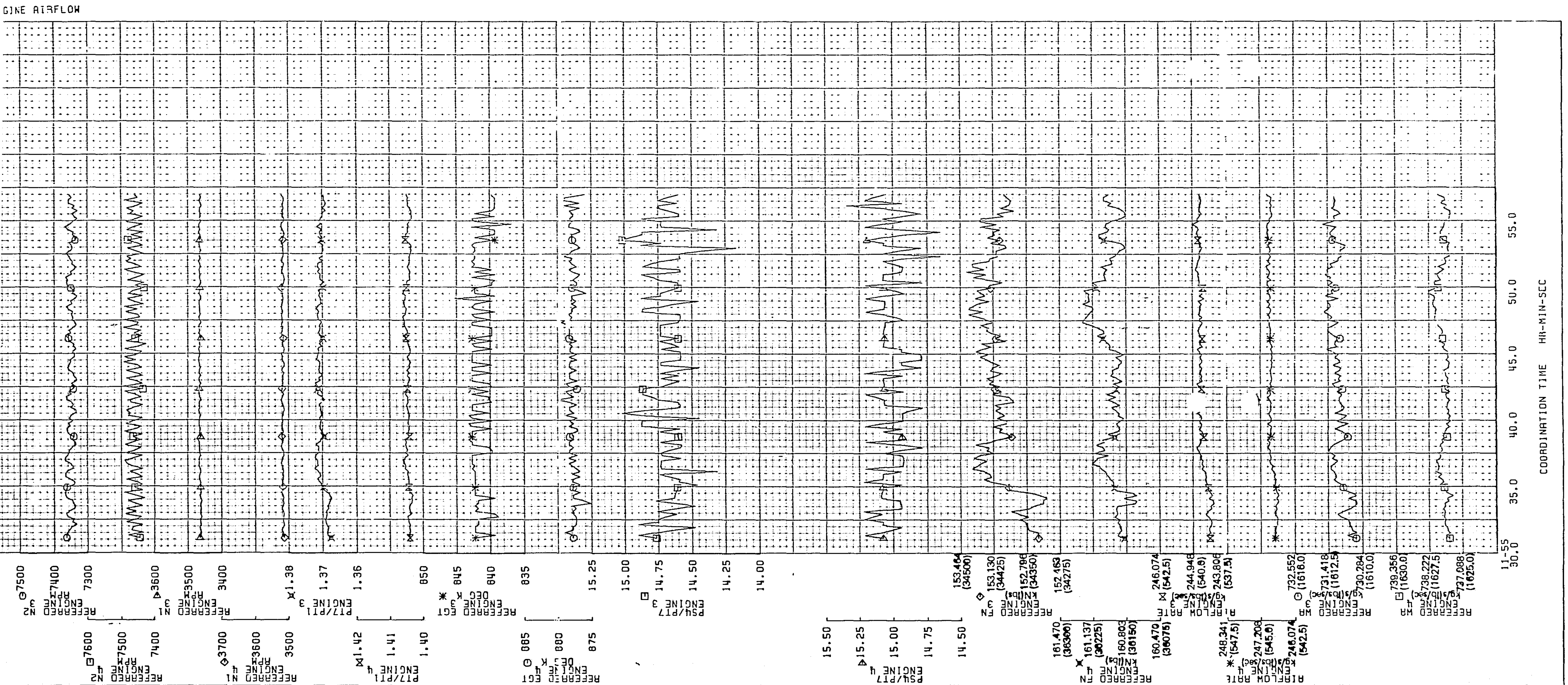


• CONTROL SURFACE POSITION

H_P	= 11 596m (38 045 ft)	M	= 0.776
GW	= 218 678 kg (482 102 lbm)	α	= 3.0 deg
Q	= 8.694 kPa (1.261 PSI)	FLAPS = 0 deg	
V_c	= 454.1 km/h (245.2 KTS)	LANDING GEAR UP	

Figure B-8. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.002) (Continued)

125209-282



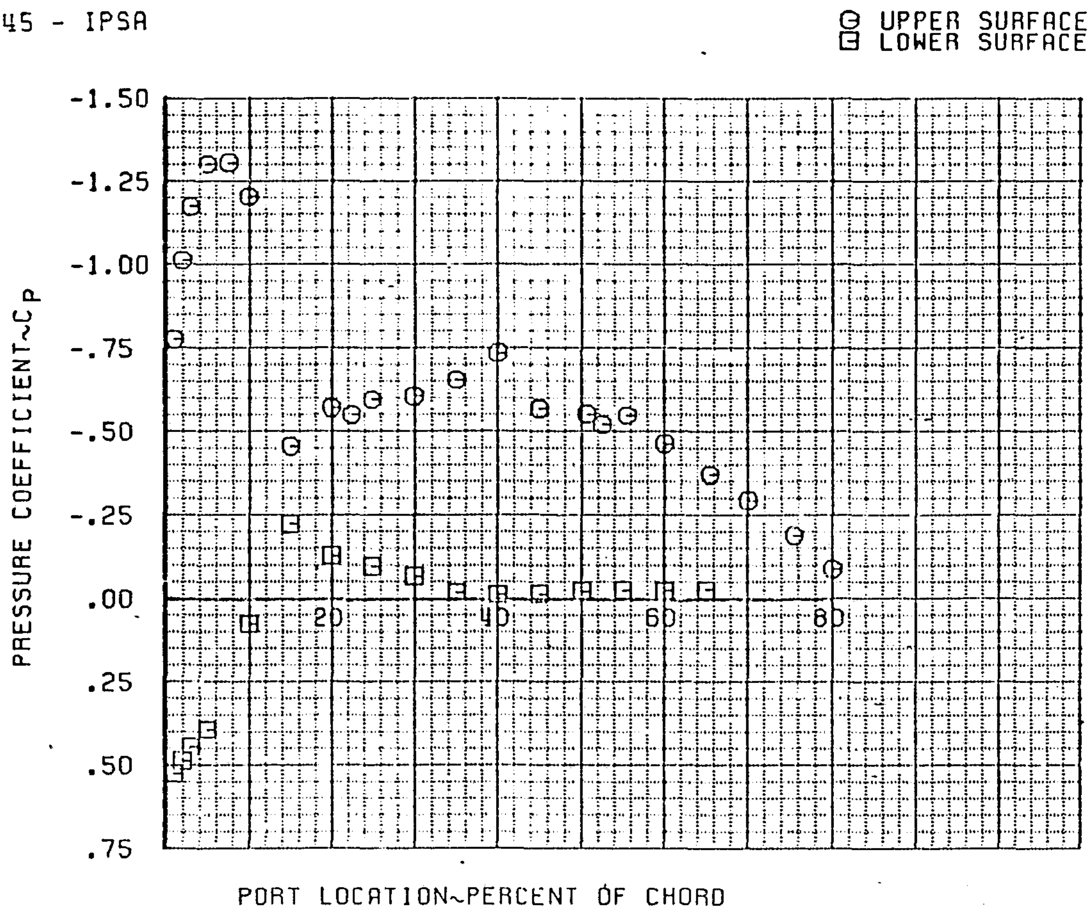
• ENGINE AIRFLOW

Hp	= 11 596m (38 045 ft)	M	= 0.776
GW	= 218 678 kg (482 102 lbm)	α	= 3.0 deg
Q	= 8.694 kPa (1.261 PSI)	FLAPS = 0 deg	
V_c	= 454.1 km/h (245.2 KTS)	LANDING GEAR UP	

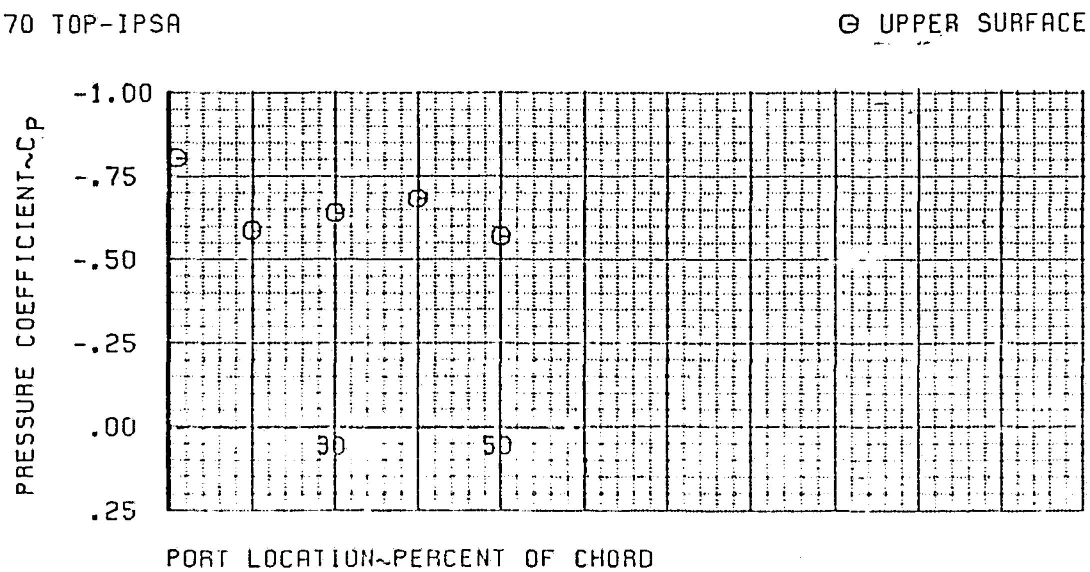
Figure B-8. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.002) (Concluded)

125209-281

● WBL 445 - IPSA



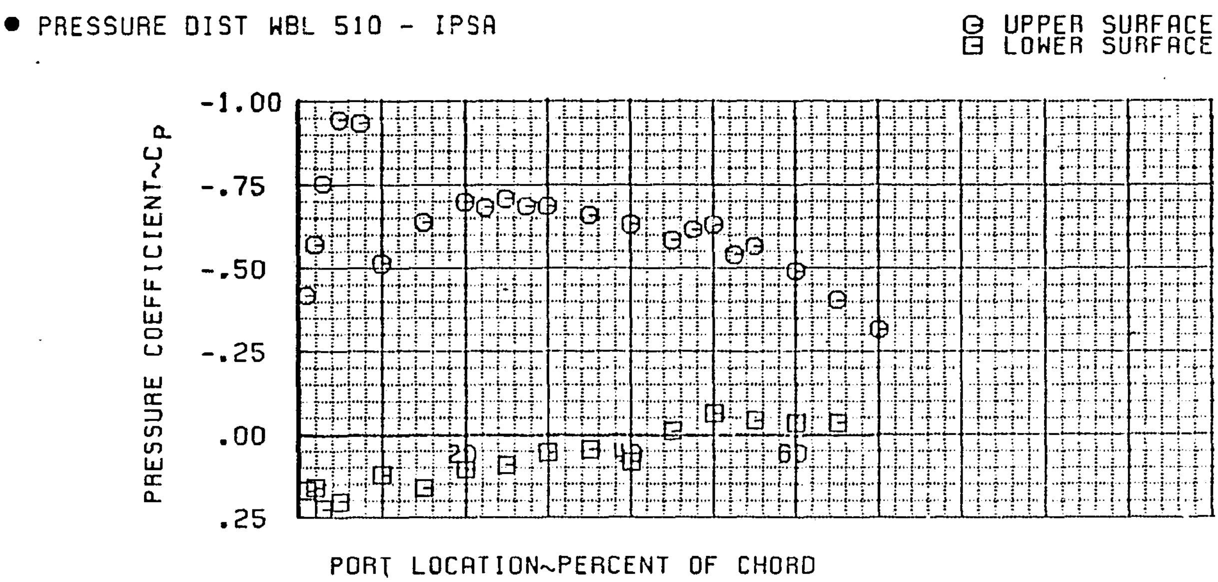
● WBL 470 TOP-IPSA

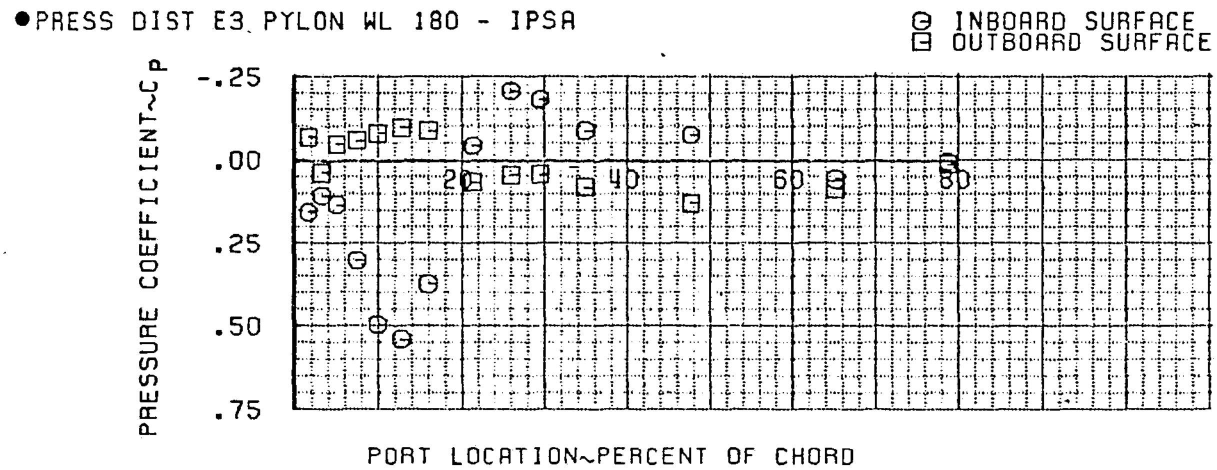


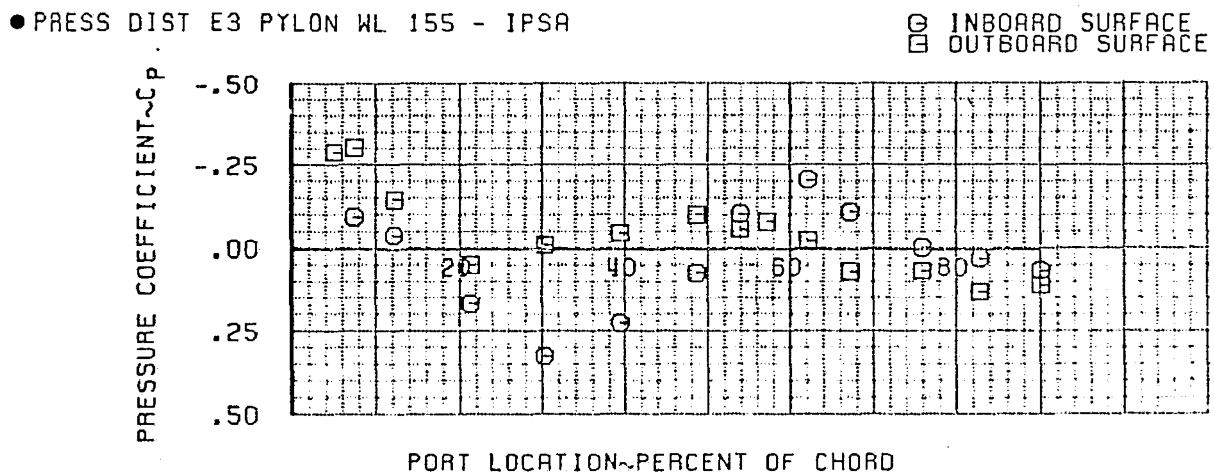
H_p	= 11 601m (38 060 ft)	M	= 0.802
GW	= 218 085 kg (480 796 lbm)	α	= 2.6 deg
Q	= 9.267 kPa (1.344 PSI)	FLAPS = 0 deg	
V_c	= 470.6 km/h (254.1 KTS)	LANDING GEAR UP	

125209-283

Figure B-9. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.003)





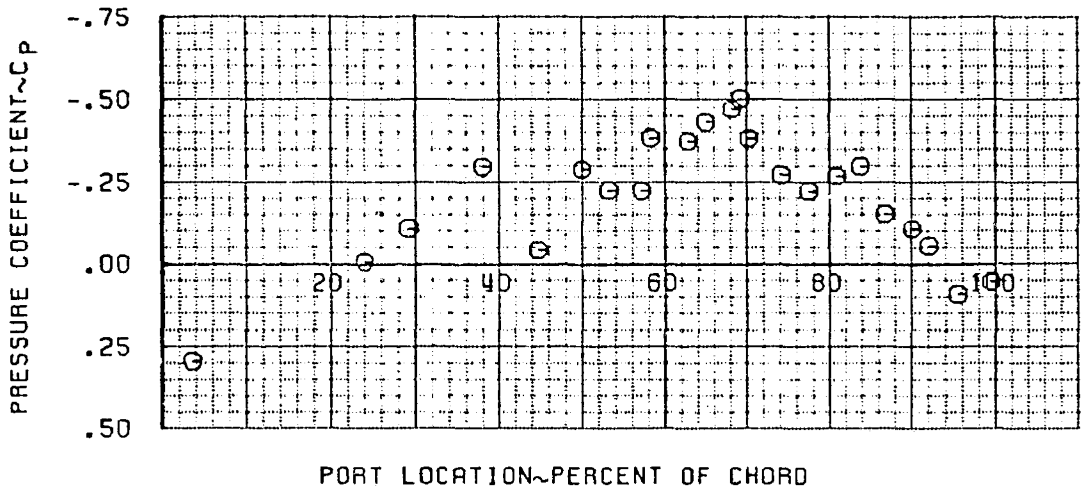


H_p	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS = 0 deg		
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

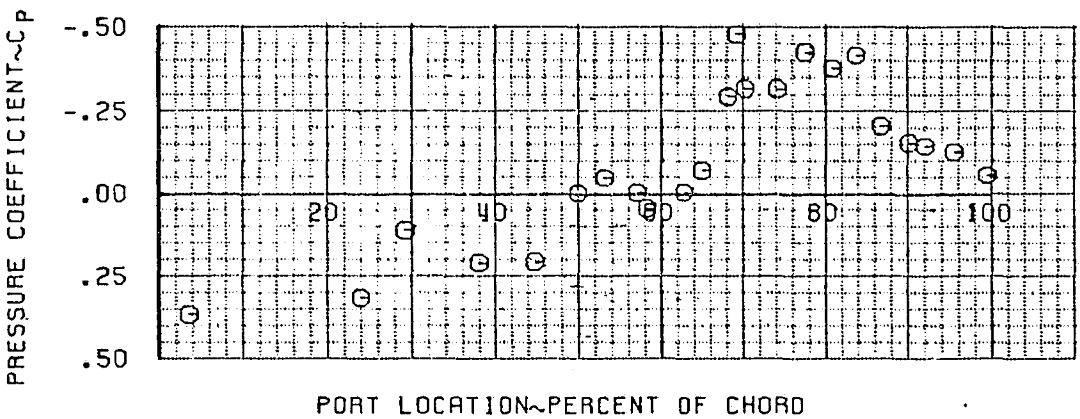
125209-2F4

Figure B-9. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.003) (Continued)

• PRESS DIST E3 CORE 030 DEG - IPSA — ⊖ OUTBOARD SURFACE



• PRESSURE DIST E3 CORE 330 DEG - IPSA — ⊖ INBOARD SURFACE

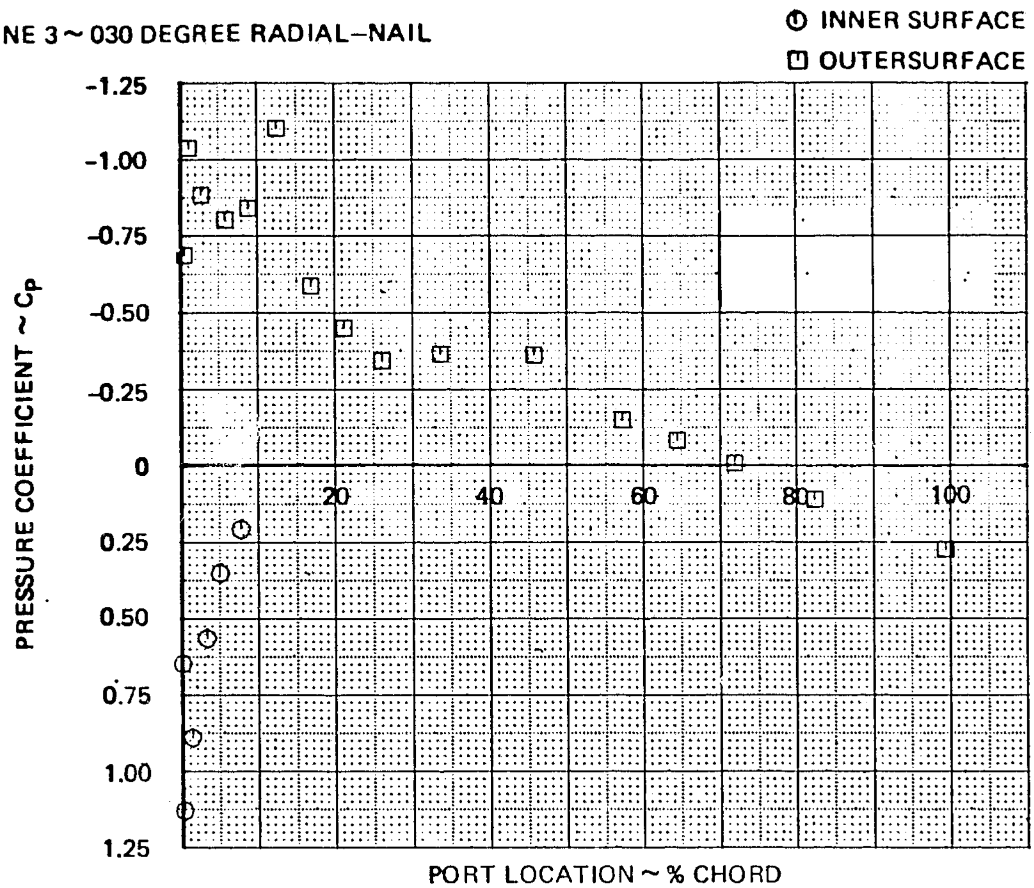


H_P	= 11 601m (38 060 ft)	M	= 0.802
GW	= 218 085 kg (480 796 lbm)	α	= 2.6 deg
Q	= 9.267 kPa (1.344 PSI)	FLAPS = 0 deg	
V_c	= 470.6 km/h (254.1 KTS)	LANDING GEAR UP	

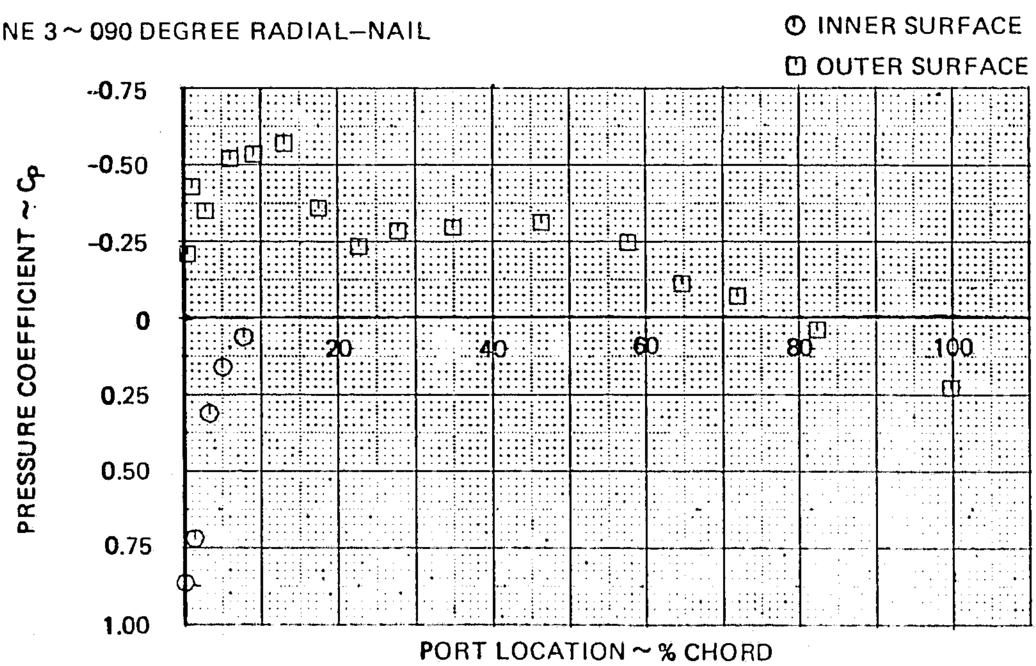
125209-285

Figure B-9. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.003)(Continued)

• ENGINE 3 ~ 030 DEGREE RADIAL–NAIL



• ENGINE 3 ~ 090 DEGREE RADIAL–NAIL

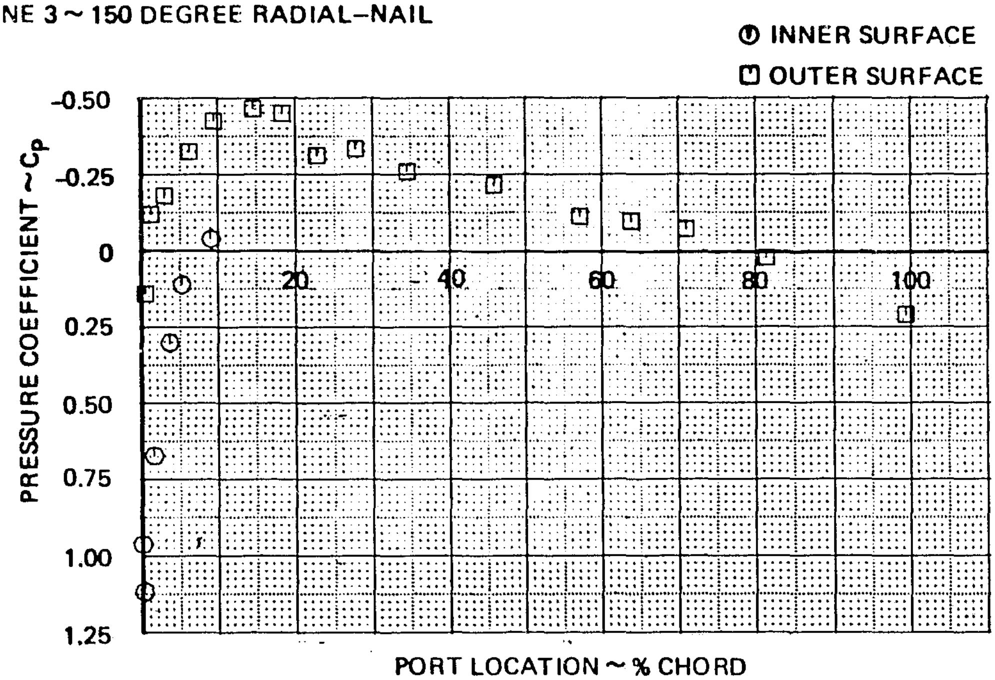


H_P	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS = 0 deg		
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

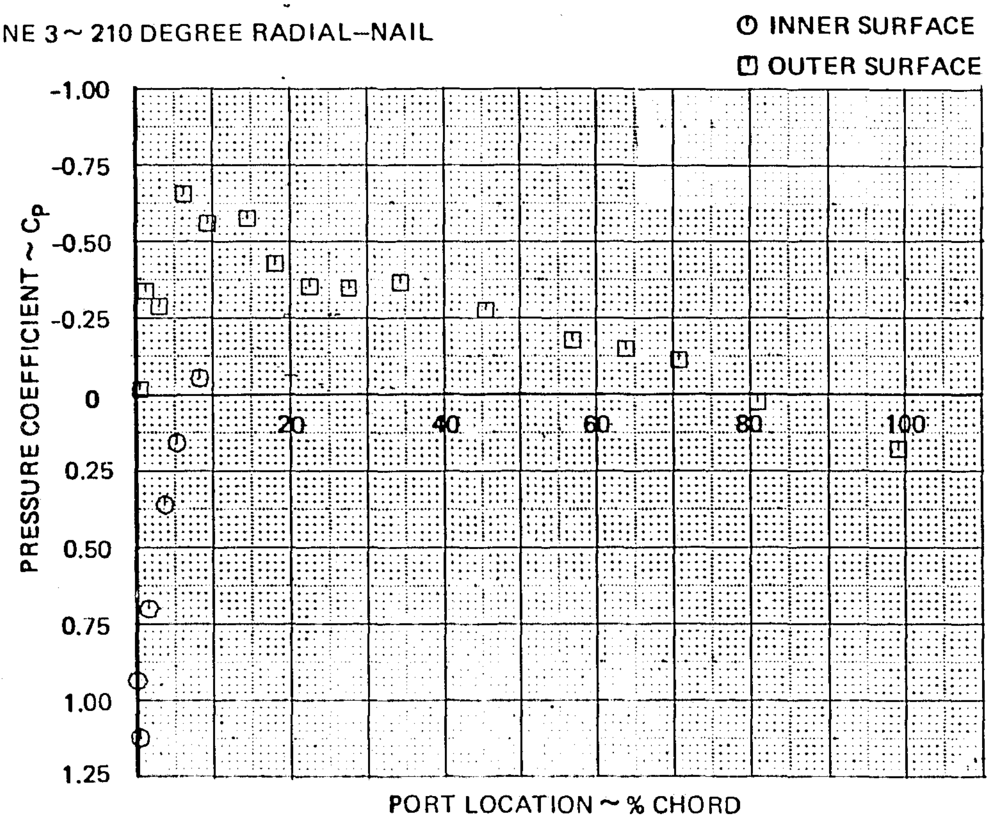
125209-286

Figure B-9. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.003)(Continued)

● ENGINE 3 ~ 150 DEGREE RADIAL–NAIL



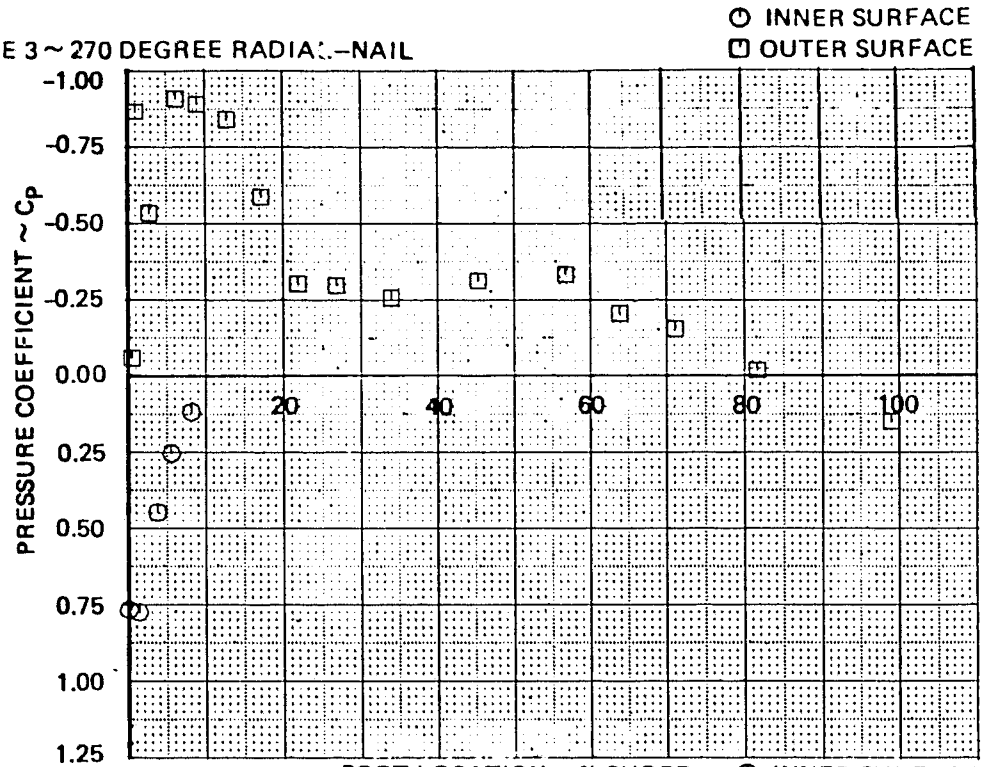
● ENGINE 3 ~ 210 DEGREE RADIAL–NAIL

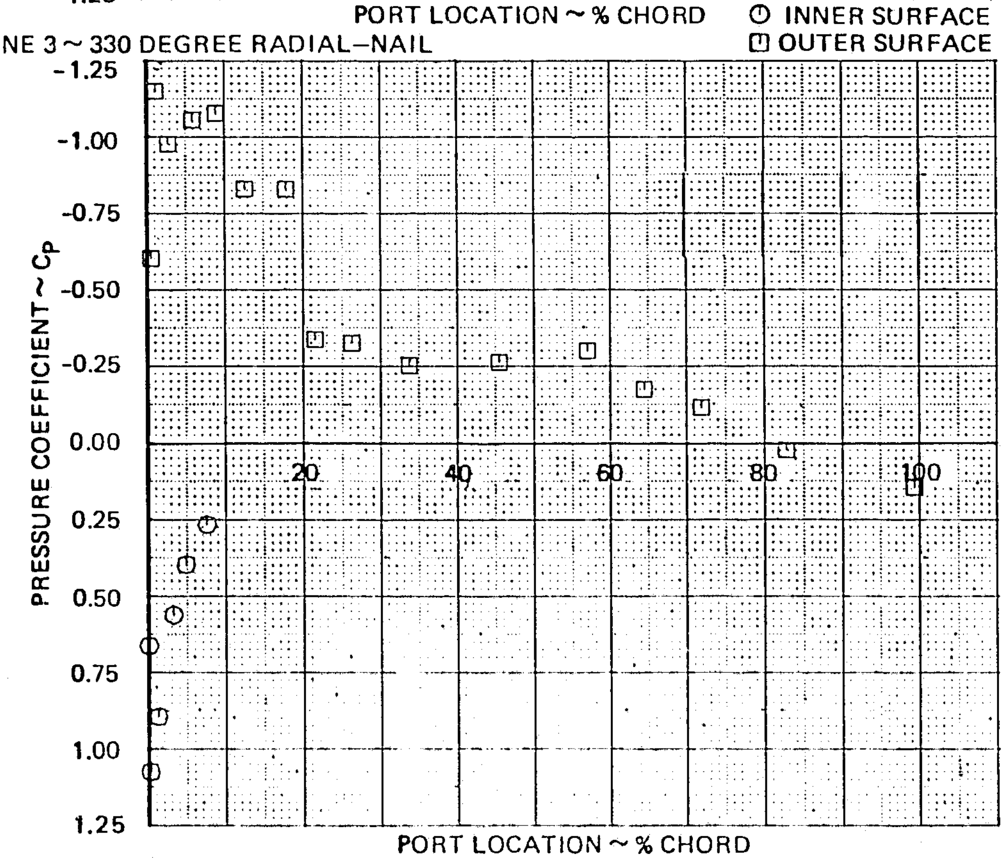


H_P	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS = 0 deg		
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

125209-287

Figure B-9. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.003)(Continued)



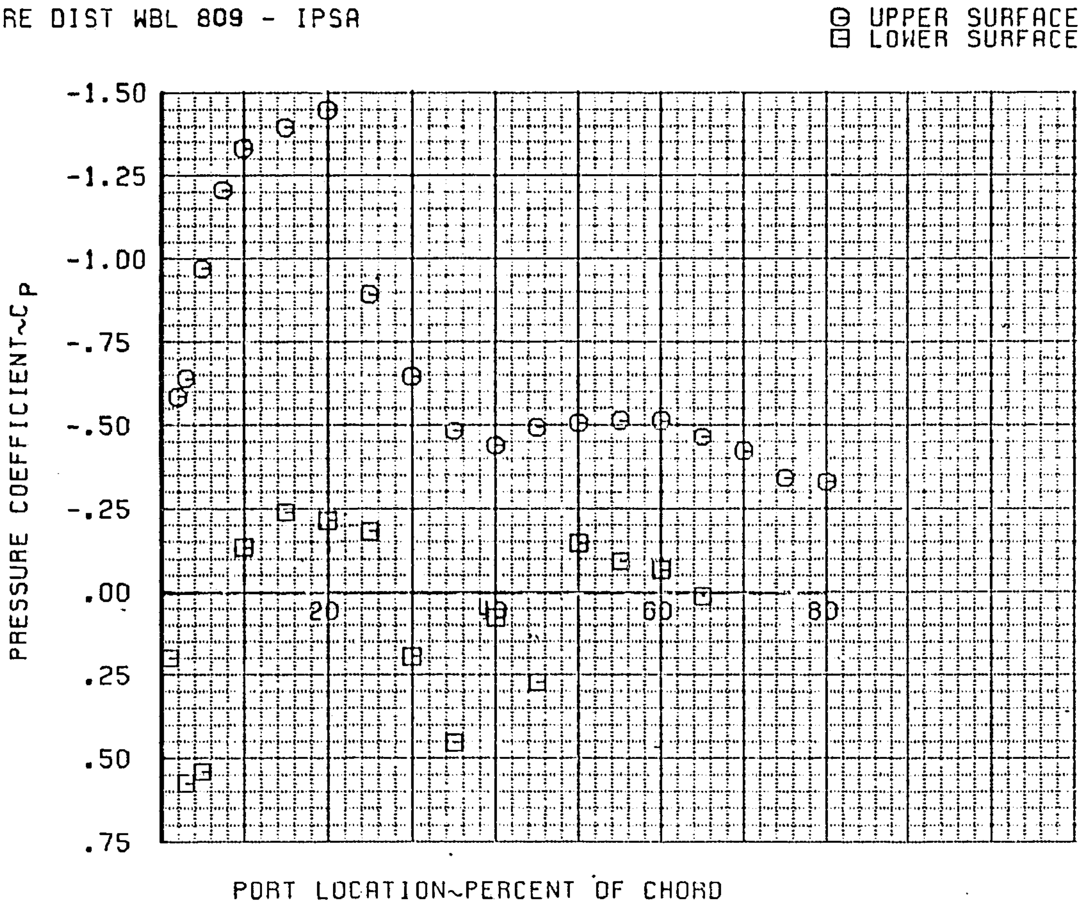


H_P	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS	=	0 deg
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

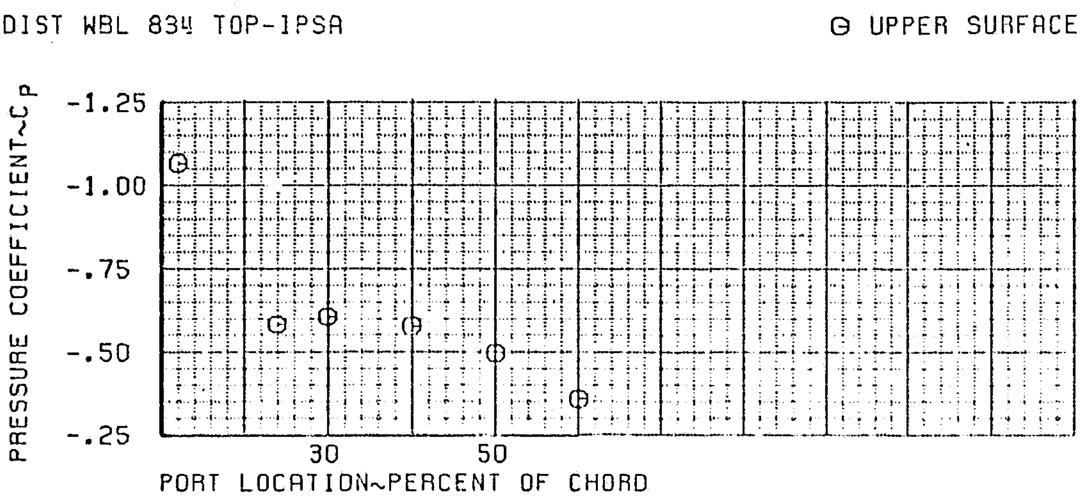
125209-288

Figure B-9. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.003)(Continued)

●PRESSURE DIST WBL 809 - IPSA



●PRESS DIST WBL 834 TOP-IPSA

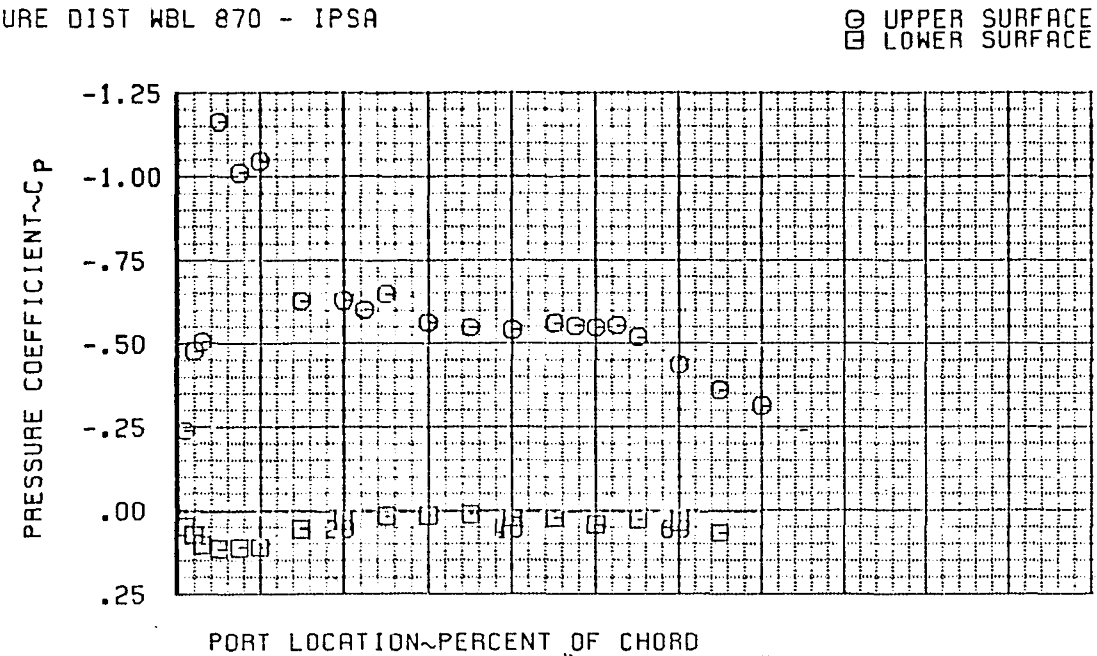


H_p	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS = 0 deg		
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

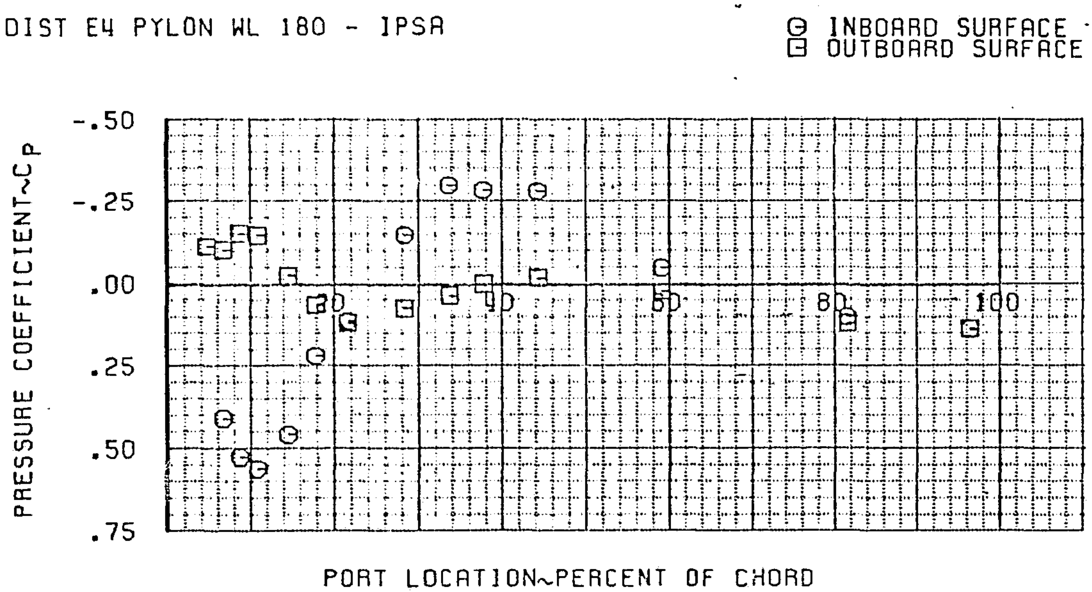
125209-289

Figure B-9. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.003)(Continued)

● PRESSURE DIST WBL 870 - IPSA



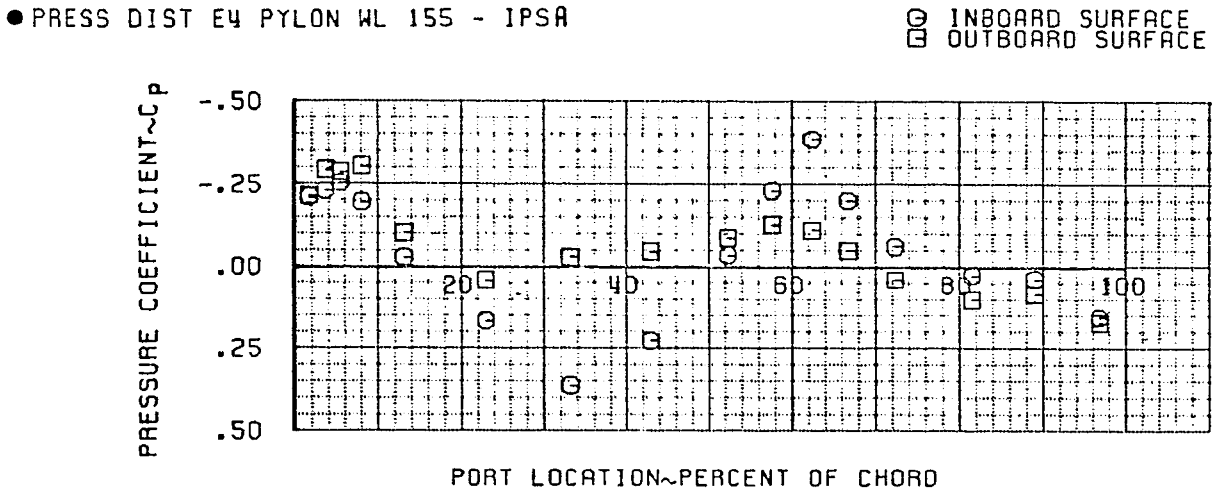
● PRESS DIST E4 PYLON WL 180 - IPSA

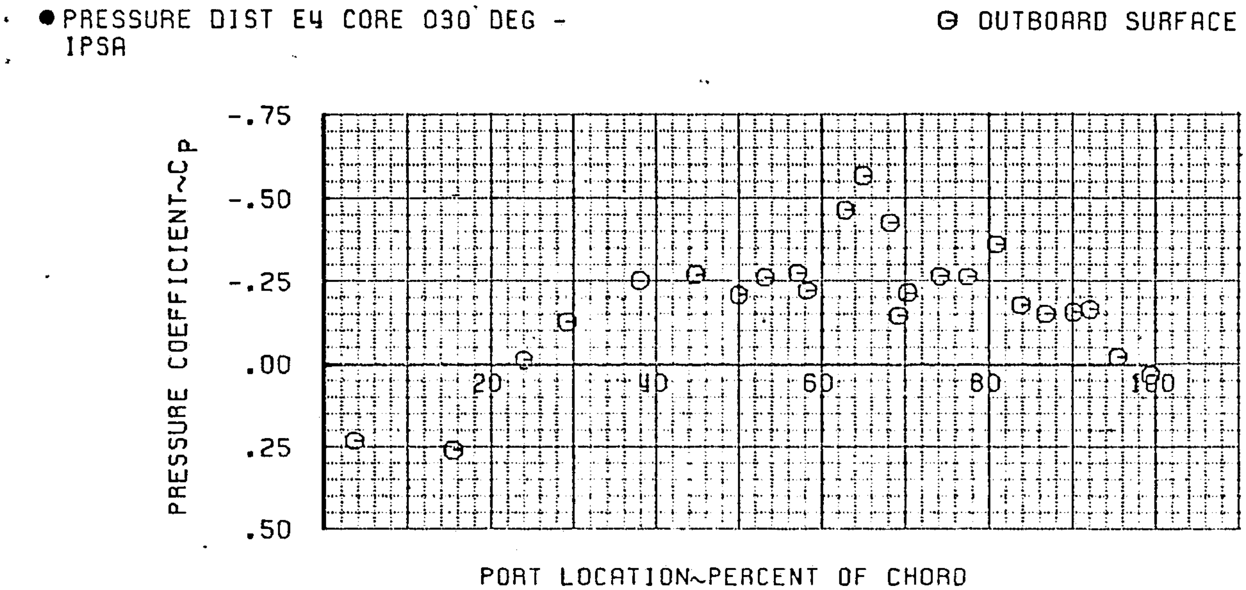


H_P	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS = 0 deg		
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

125209-290

Figure B-9. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.003)(Continued)

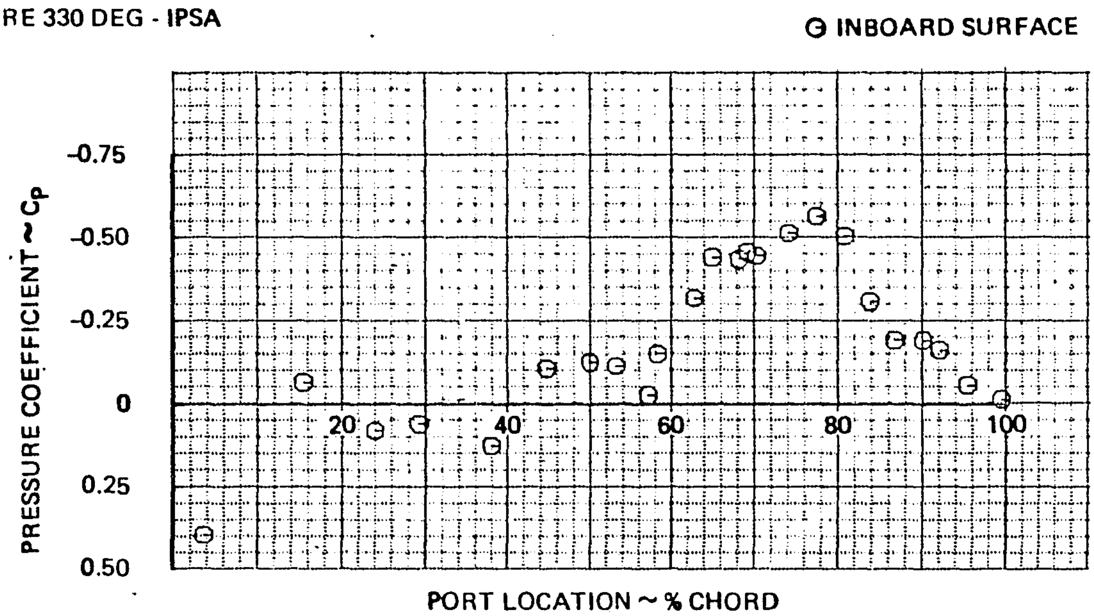


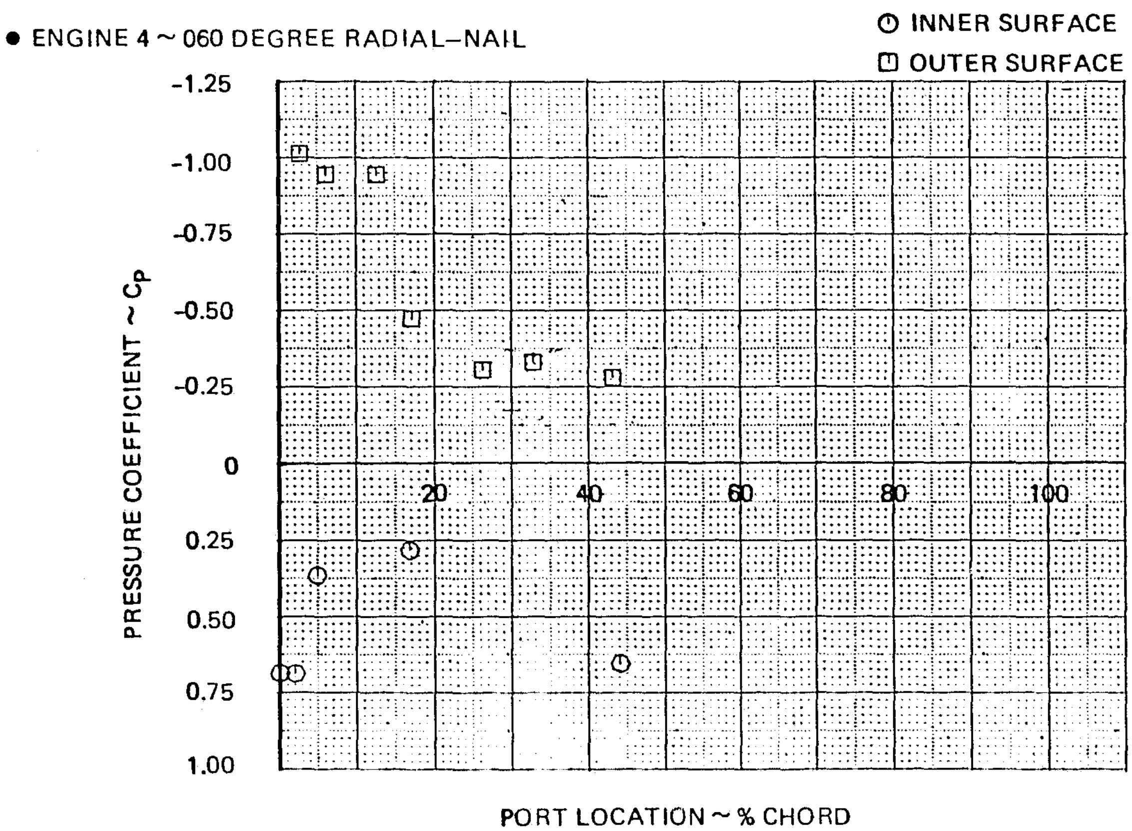


H_p	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS = 0 deg		
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

125209-291

Figure B-9. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.003)(Continued)



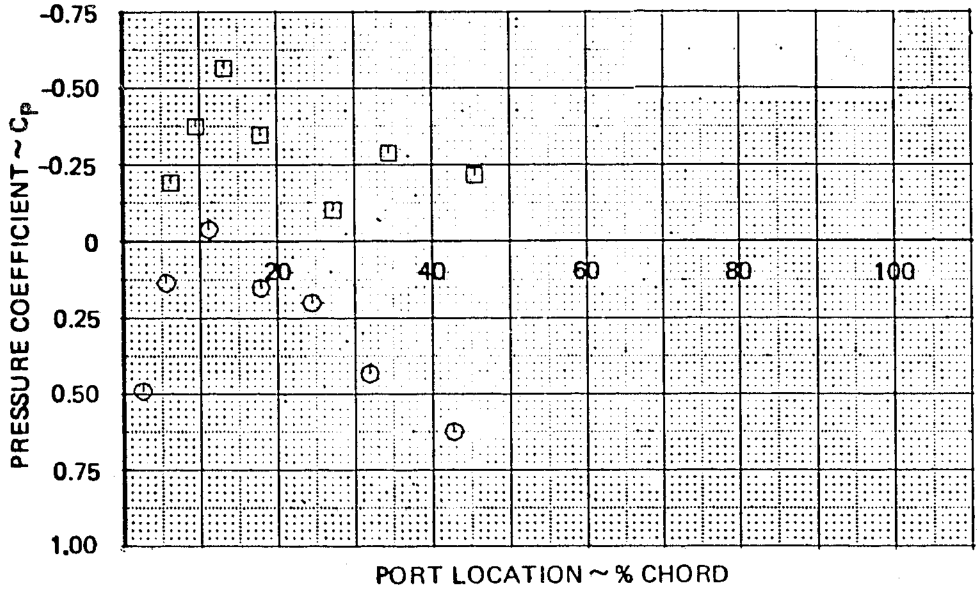


Hp	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS = 0 deg		
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

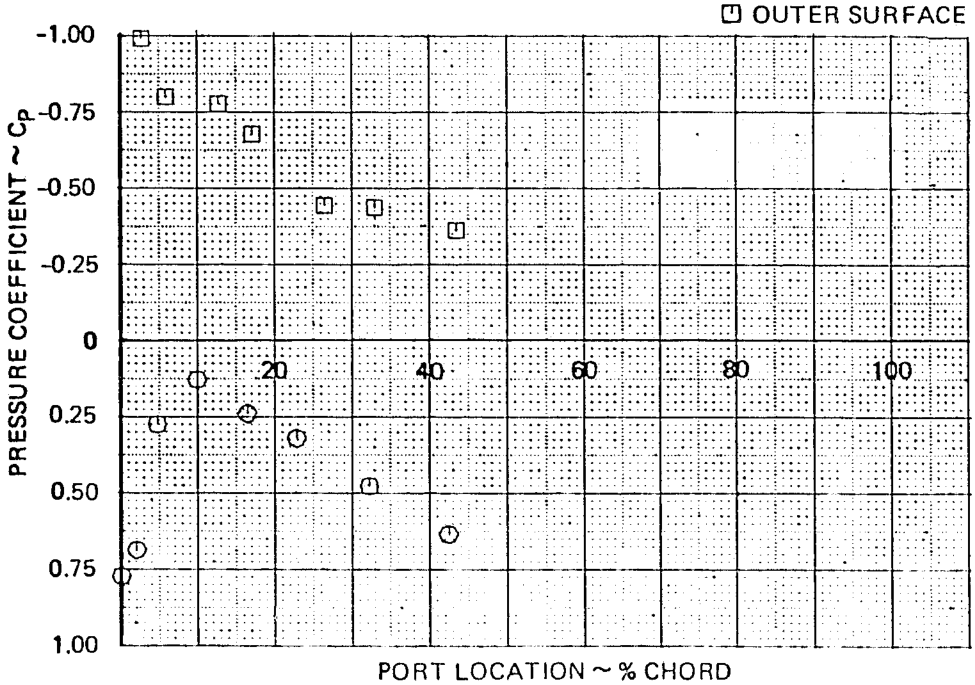
125209-292

Figure B-9. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.003)(Continued)

• ENGINE 4 ~ 180 DEGREE RADIAL–NAIL



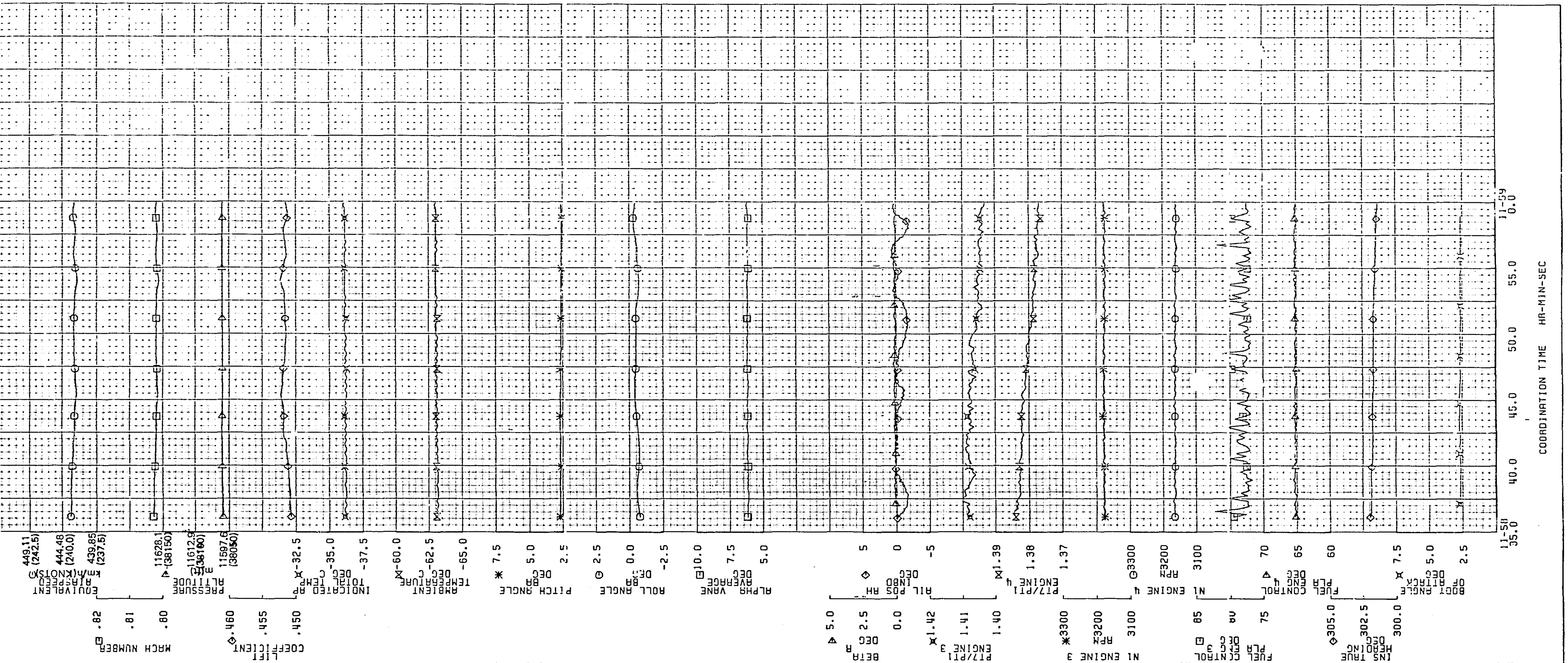
• ENGINE 4 ~ 300 DEGREE RADIAL–NAIL



Hp	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS	=	0 deg
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

125209-293

Figure B-9. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.003)(Continued)

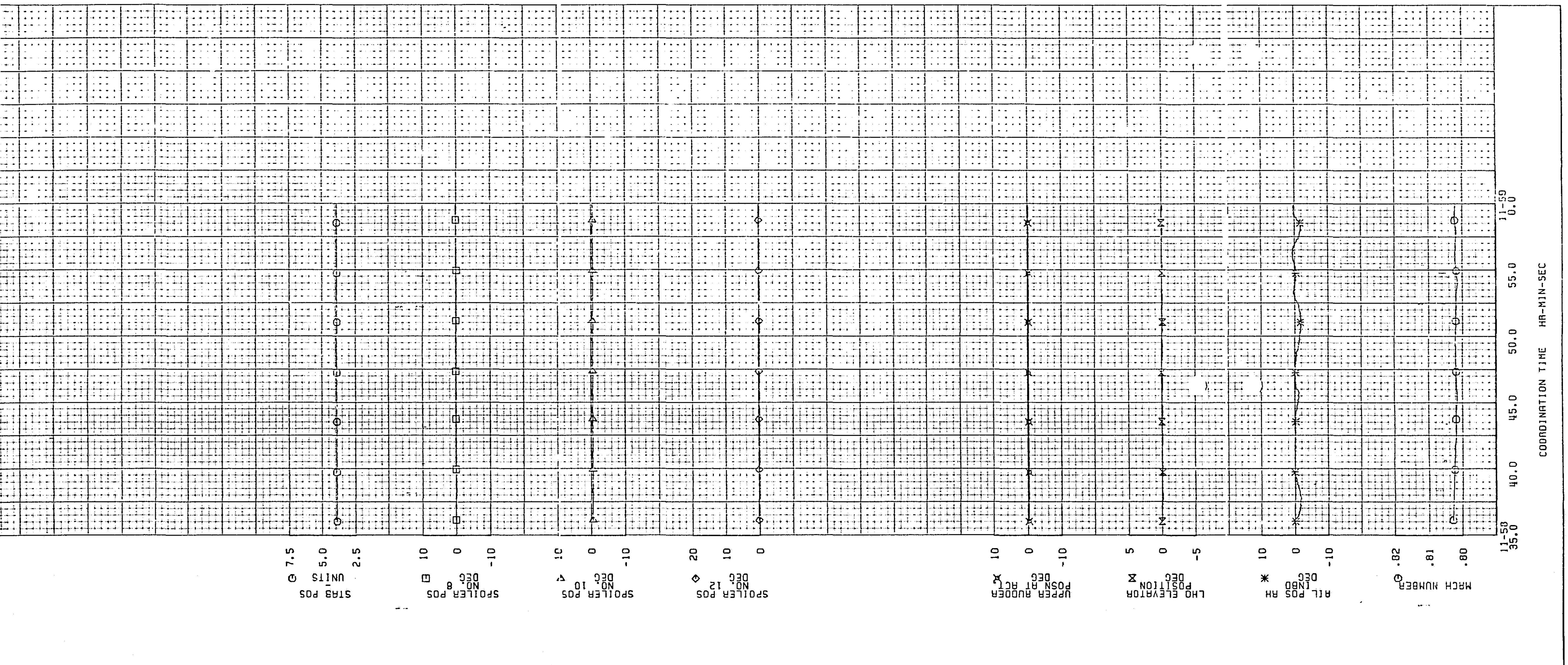


• CONDITION STABILITY

Hp	= 11 601m (38 060 ft)	M	= 0.802
GW	= 218 065 kg (480 796 lbm)	α	= 2.6 deg
Q	= 9.267 kPa (1.344 PSI)	FLAPS = 0 deg	
V_c	= 470.6 km/h (254.1 KTS)	LANDING GEAR UP	

Figure B-9. Pressure Coefficient Plots
(Test 273-15, Condition 1.00.137.003)(Continued)

125209-204

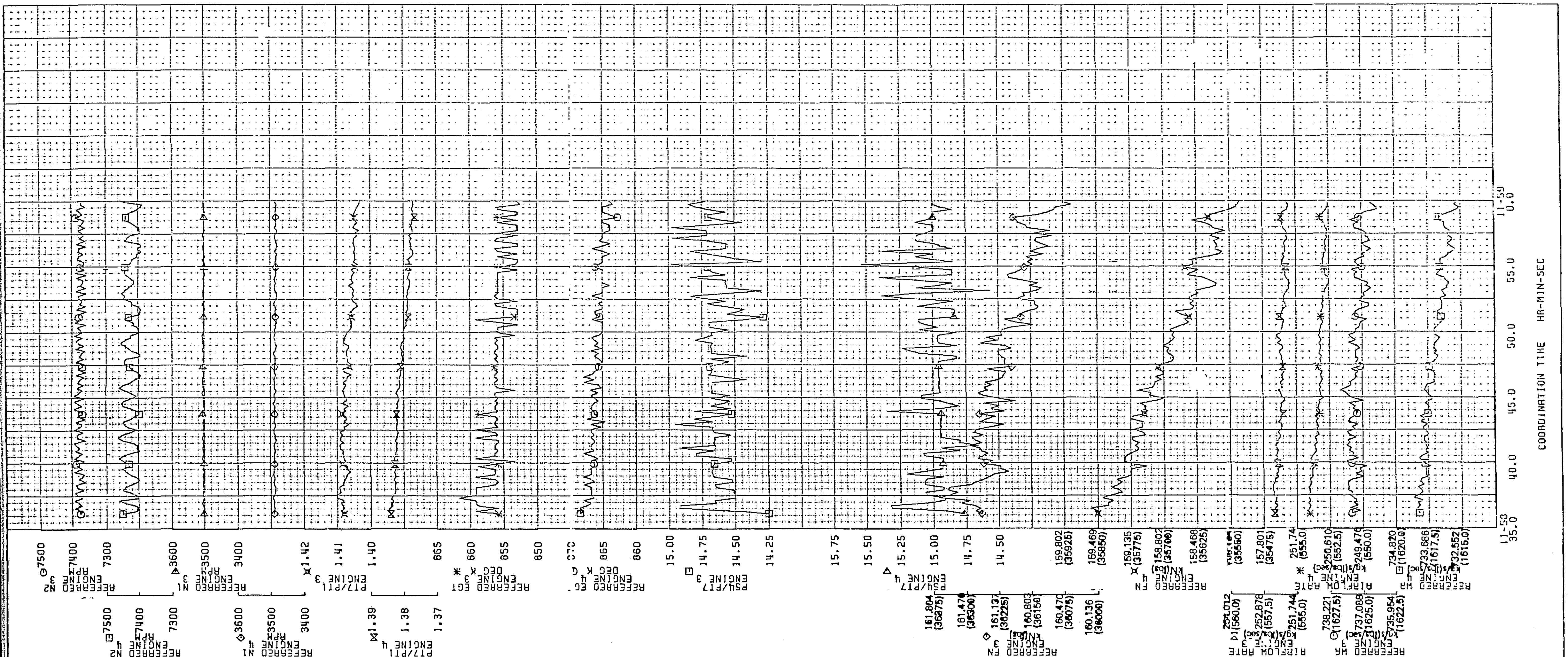


• CONTROL SURFACE POSITION

Hp	= 11 601m (38 060 ft)		M	= 0.802
GW	= 218 085 kg (480 796 lbm)		α	= 2.6 deg
Q	= 9.267 kPa (1.344 PSI)		FLAPS	= 0 deg
V_c	= 470.6 km/h (254.1 KTS)		LANDING GEAR UP	

Figure B-9. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.003) (Continued)

125209-296



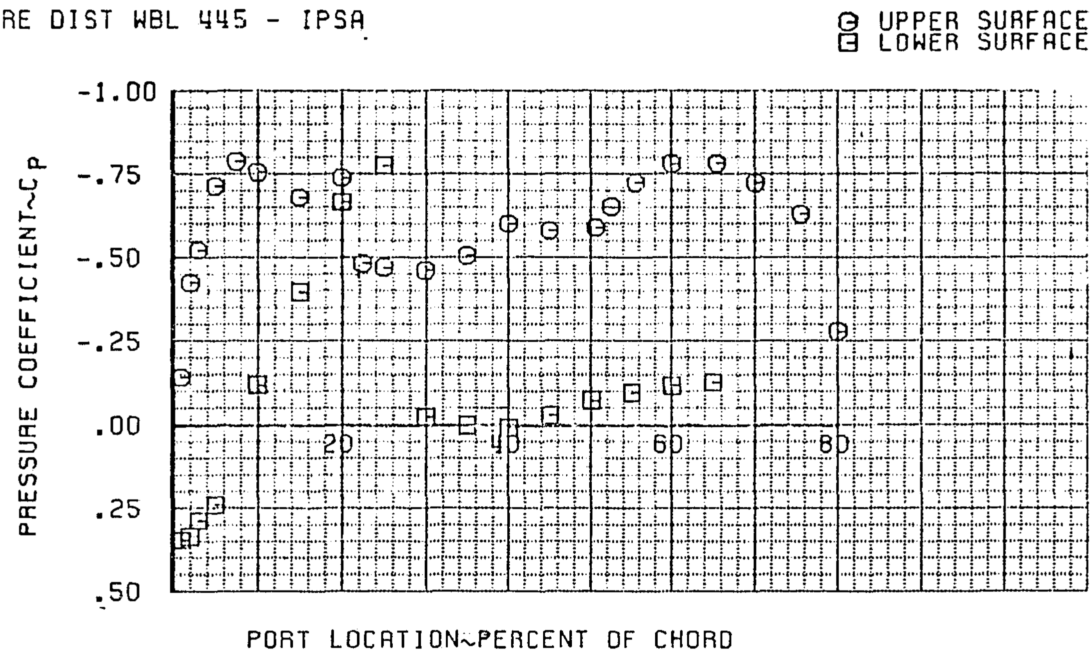
• ENGINE AIRFLOW

Hp	= 11 601m (38 060 ft)	M	= 0.802
GW	= 218 085 kg (480 796 lbm)	α	= 2.6 deg
Q	= 9.267 kPa (1.344 PSI)	FLAPS = 0 deg	
V_c	= 470.6 km/h (254.1 KTS)	LANDING GEAR UP	

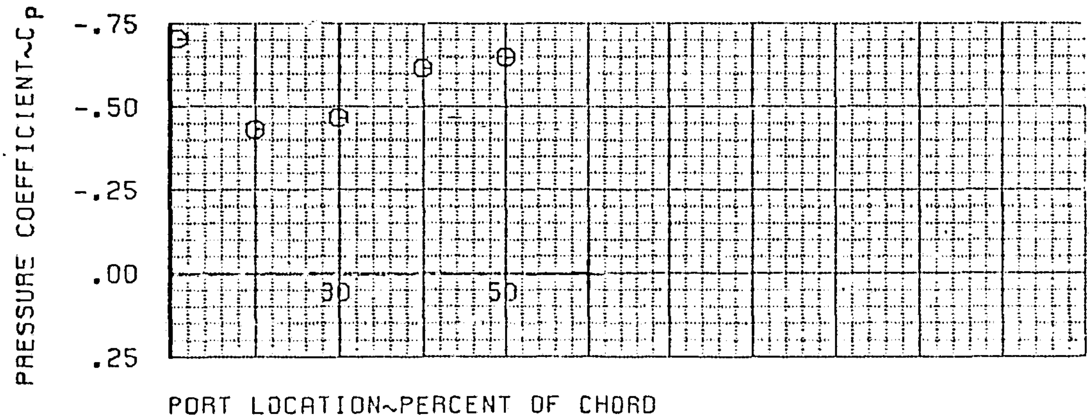
Figure B-9. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.003) (Concluded)

125209-295

●PRESSURE DIST WBL 445 - IPSA



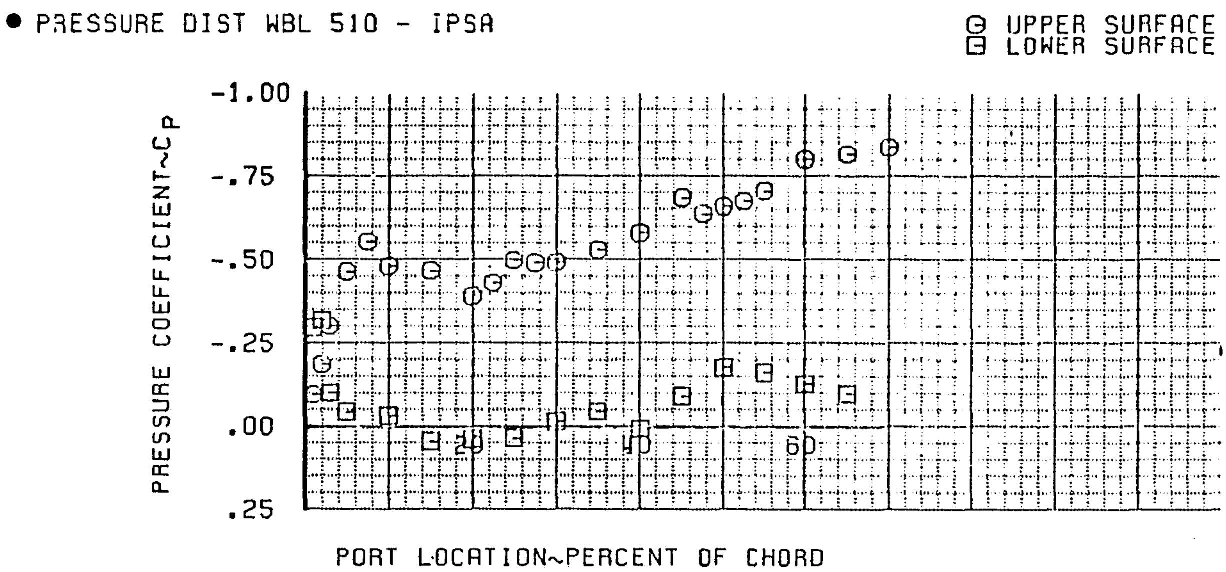
●PRESS DIST WBL 470 TOP-IPSA

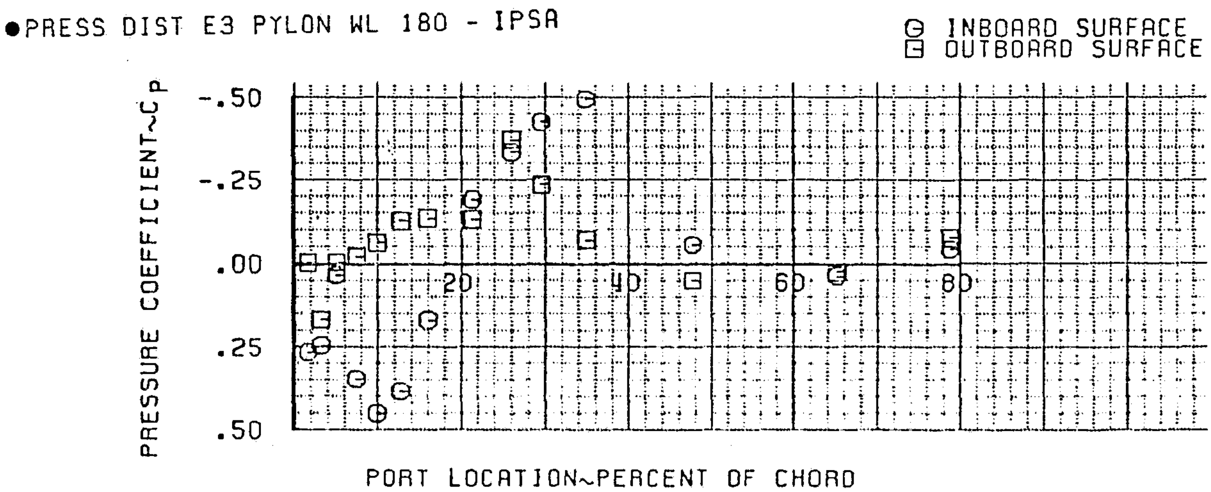


H_P	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12.162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

Figure B-10. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.004)

125209-297

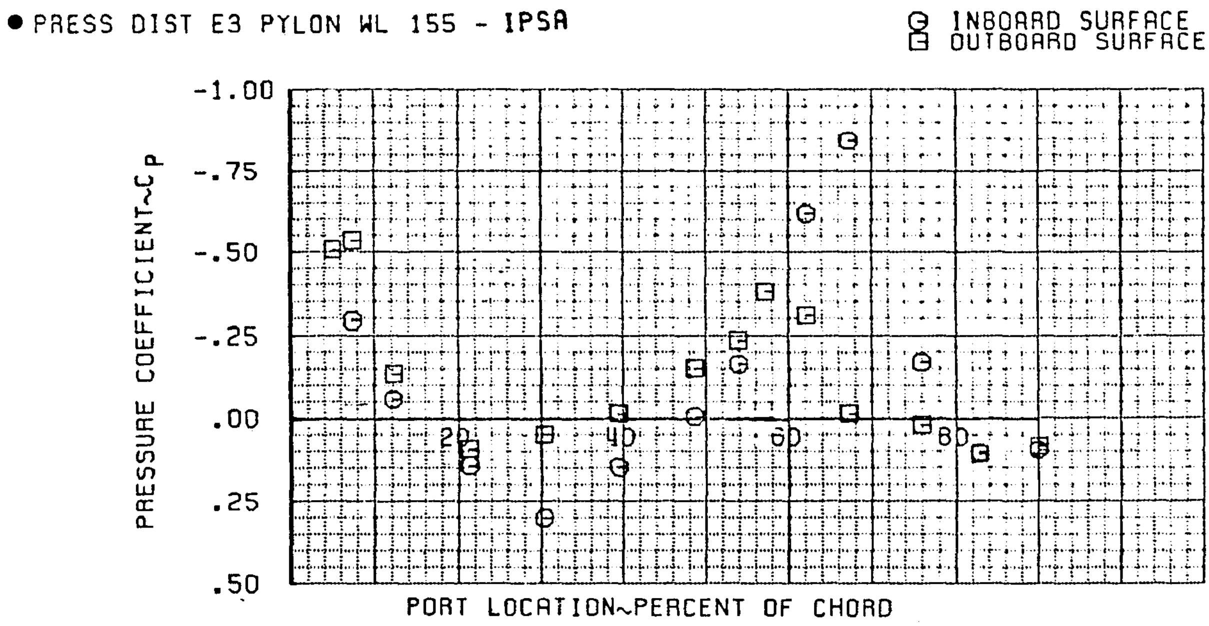


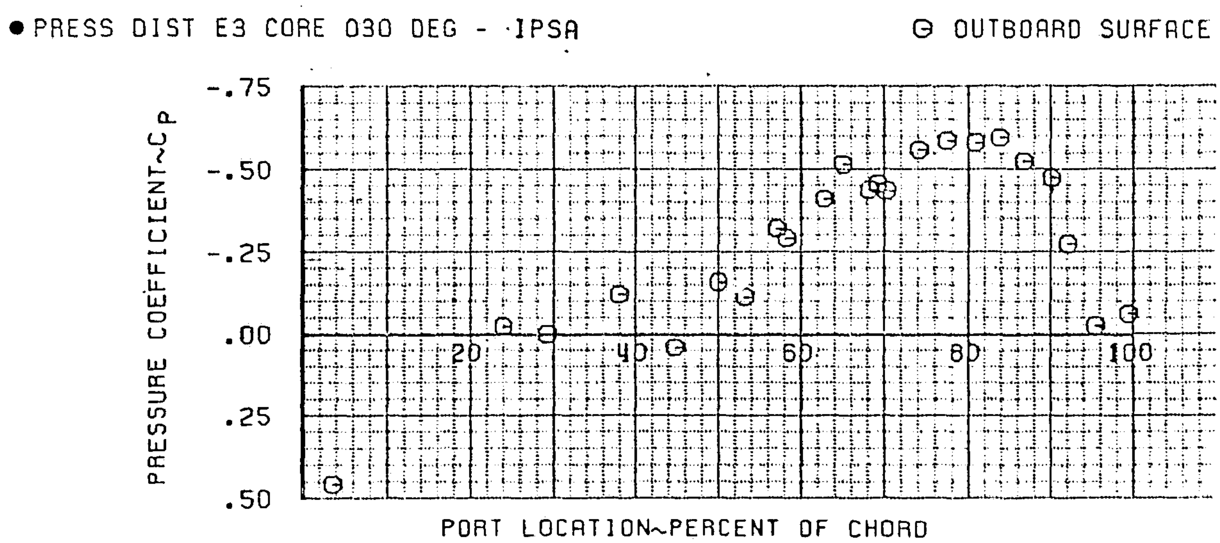


H_p	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12.162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

Figure B-10. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.004)(Continued)

125209-277A



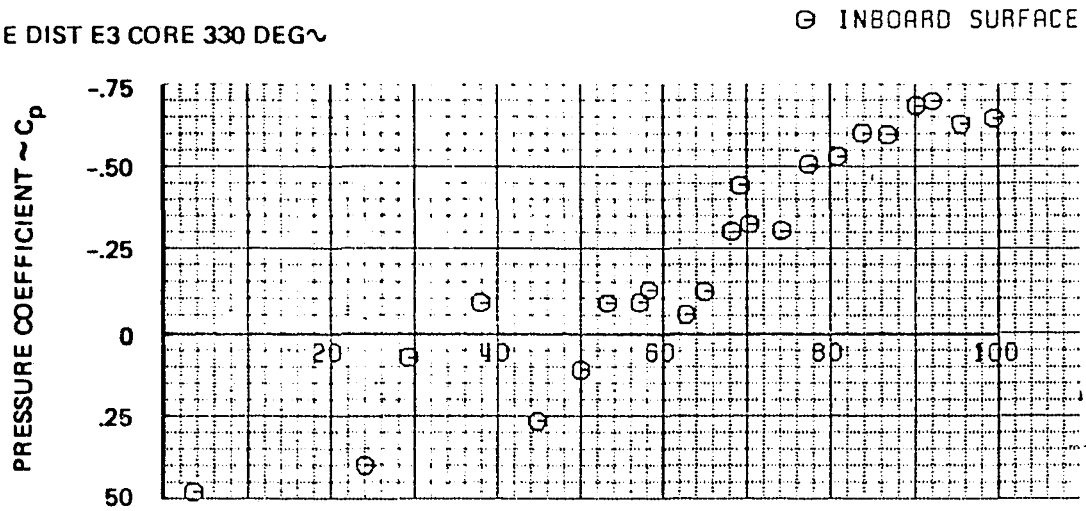


H_P	= 11 432m (37 505 ft)	M	= 0.906
GW	= 216 125 kg (476 473 lbm)	α	= 1.0 deg
Q	= 12.162 kPa (1.764 PSI)	FLAPS = 0 deg	
V_c	= 547.1 km/h (295.4 KTS)	LANDING GEAR UP	

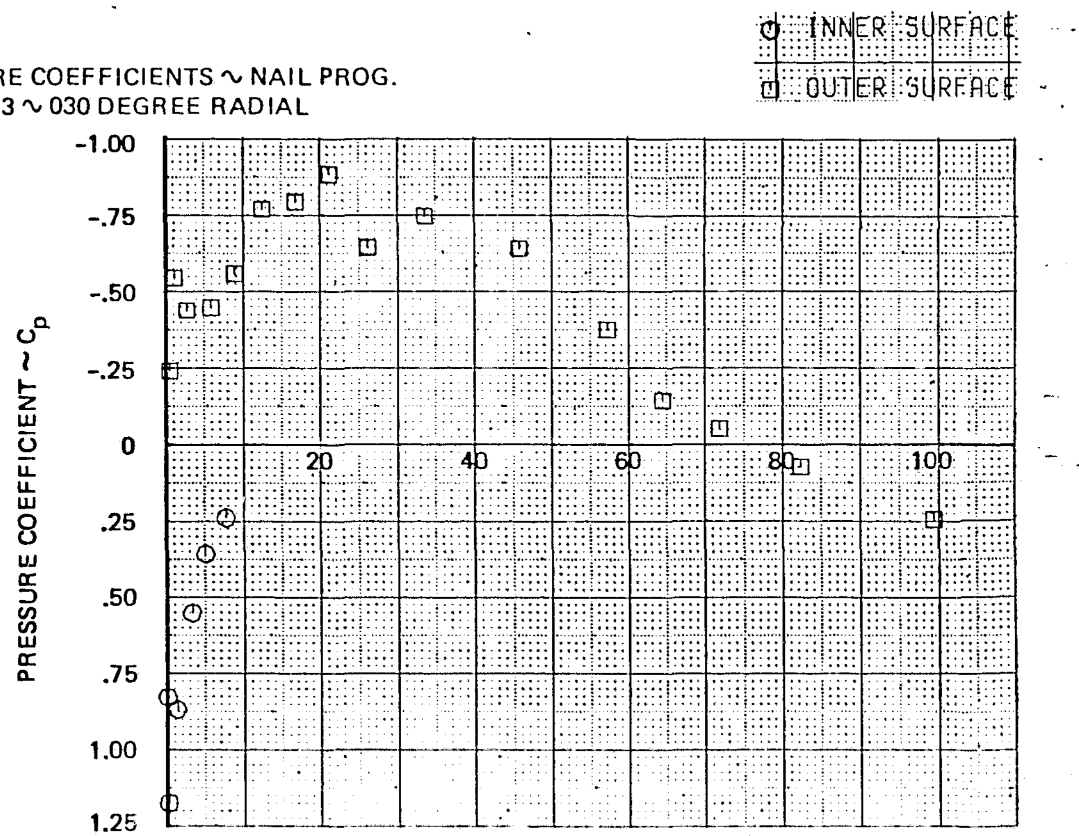
125209-298

Figure B-10. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.004)(Continued)

• PRESSURE DIST E3 CORE 330 DEG∿
IPSA



• PRESSURE COEFFICIENTS ∿ NAIL PROG.
ENGINE 3 ∿ 030 DEGREE RADIAL

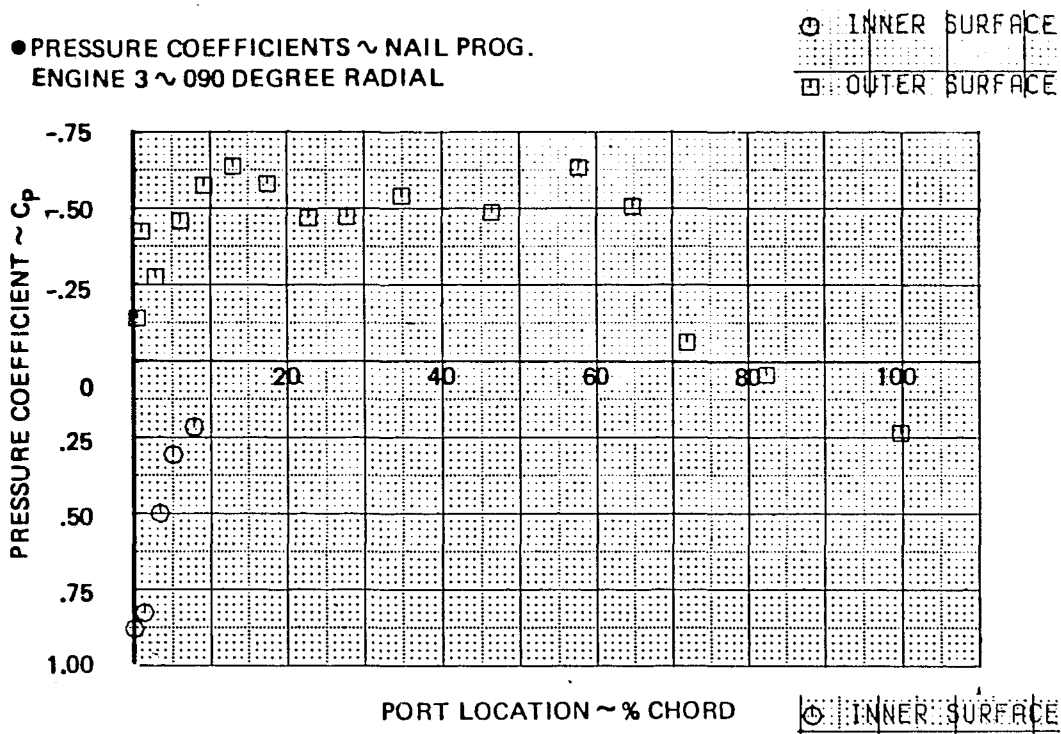


Hp	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12.162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

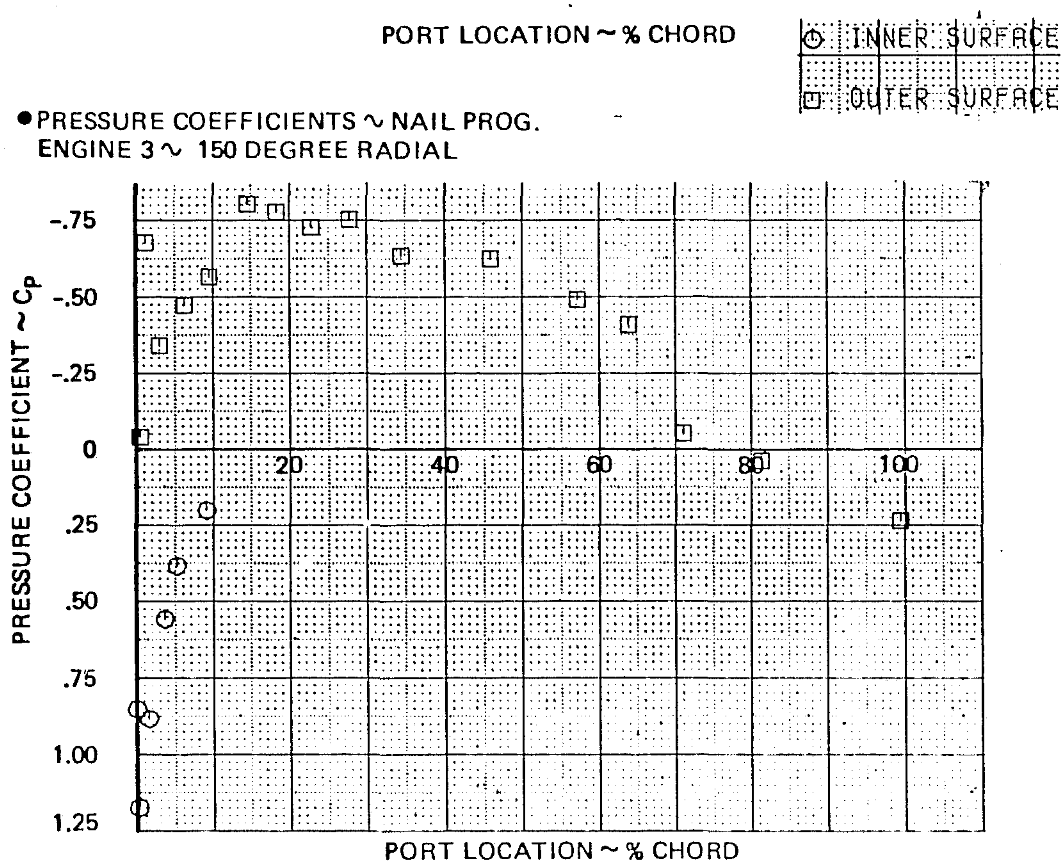
Figure B-5. Sample of Local Mach Number Data (Test 273-12, Condition 1.00.137.001.1)(Continued)

125209-299

●PRESSURE COEFFICIENTS ∿ NAIL PROG.
ENGINE 3 ∿ 090 DEGREE RADIAL



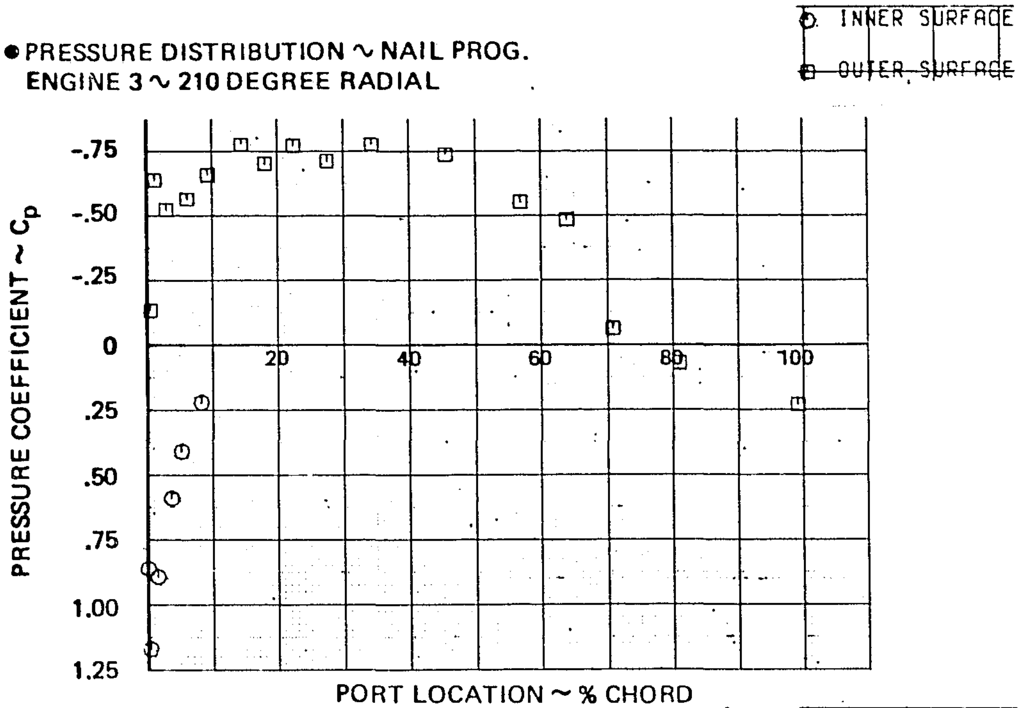
●PRESSURE COEFFICIENTS ∿ NAIL PROG.
ENGINE 3 ∿ 150 DEGREE RADIAL

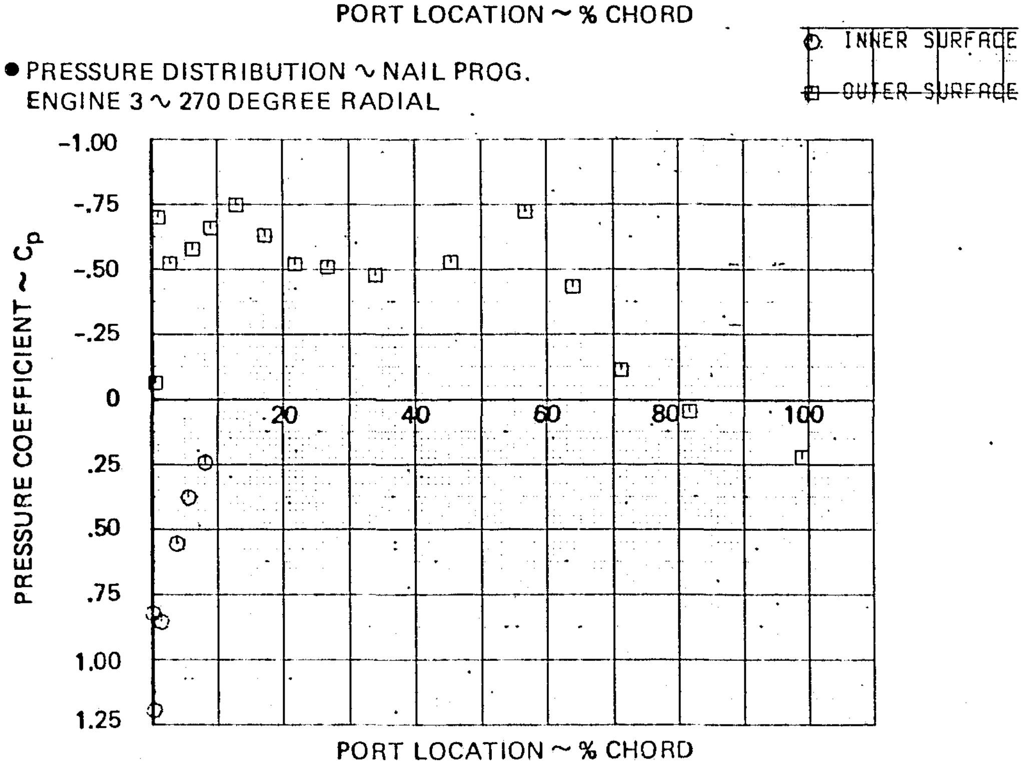


Hp = 11 432m (37 505 ft)		M = 0.906	
GW = 216 125 kg (476 473 lbm)		α = 1.0 deg	
Q = 12.162 kPa (1.764 PSI)		FLAPS = 0 deg	
V_c = 547.1 km/h (295.4 KTS)		LANDING GEAR UP	

125209-300

Figure B-10. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.004)(Continued)



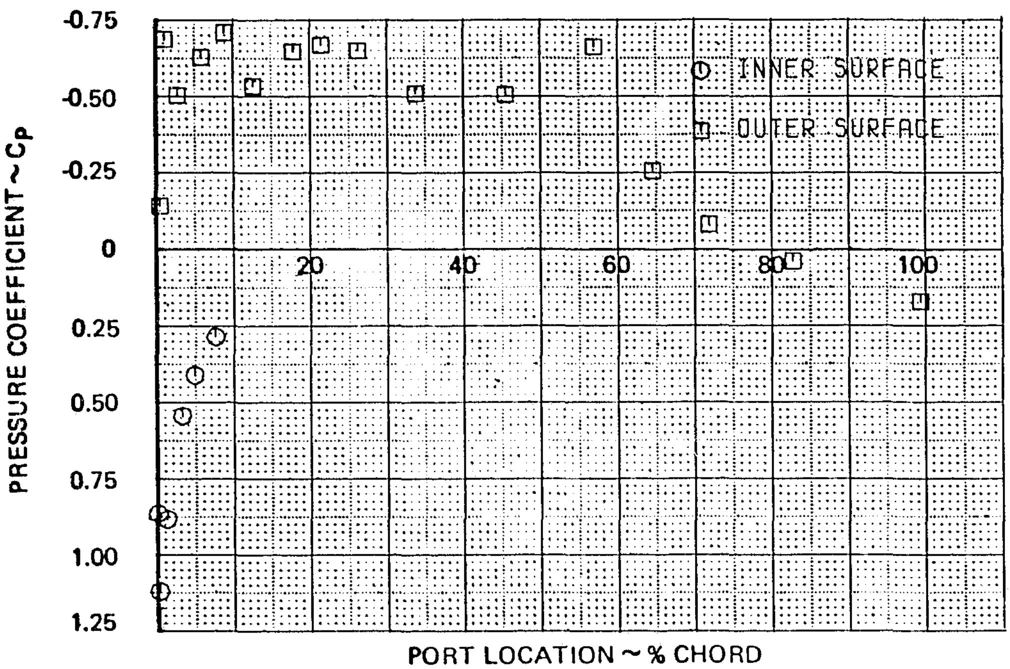


Hp	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12.162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

125209-301

Figure B-10. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.004)(Continued)

- PRESSURE COEFFICIENTS ∿ NAIL PROG.
  ENGINE 3 ∿ 330 DEGREE RADIAL

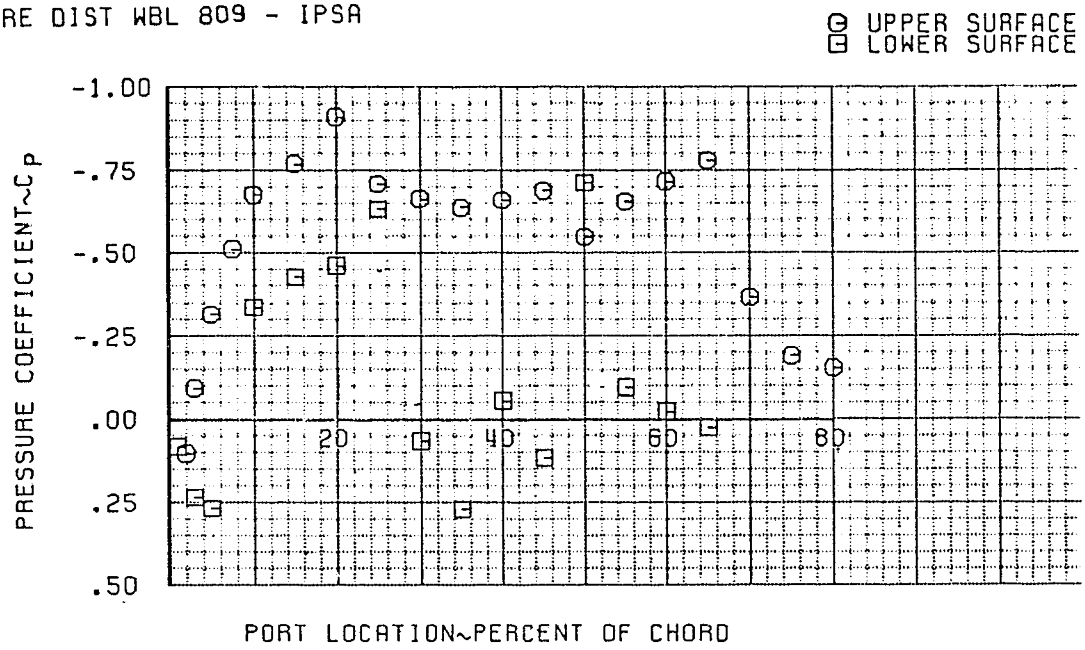


Hp	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12.162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

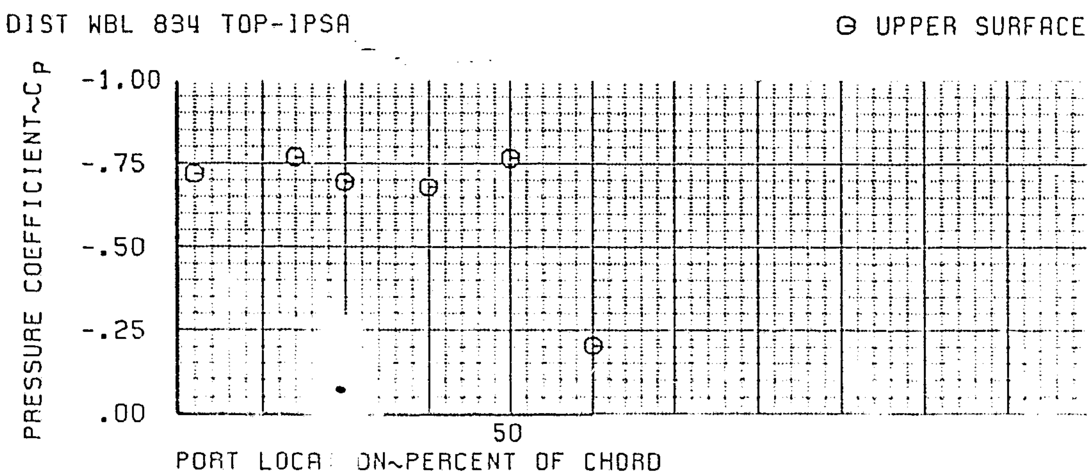
125209-302

Figure B-10. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.004)(Continued)

• PRESSURE DIST WBL 809 - IPSA



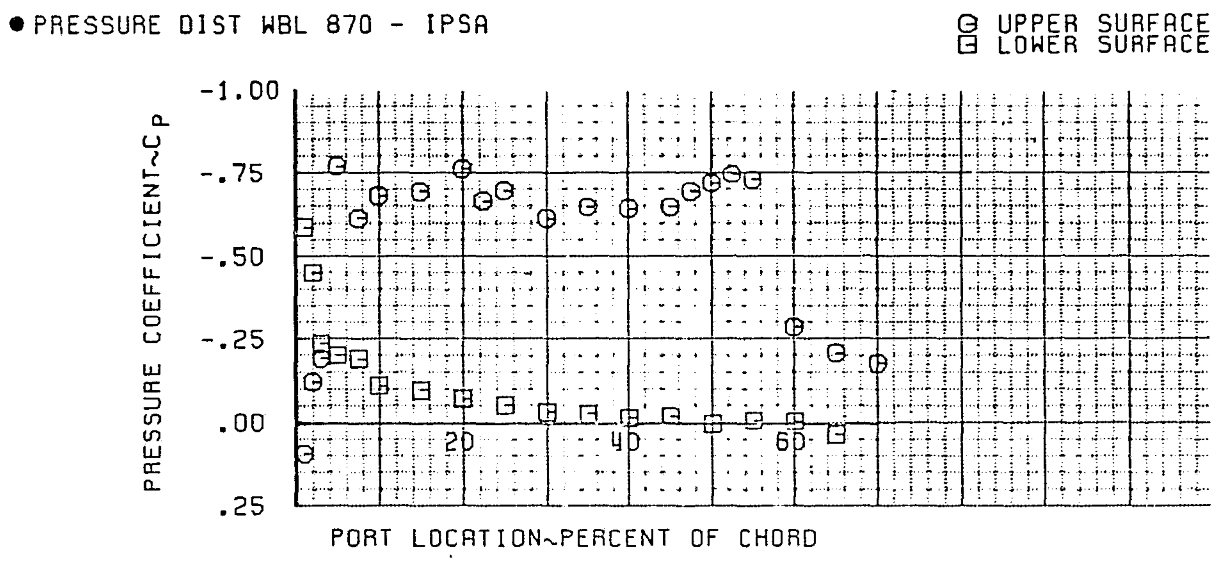
• PRESS DIST WBL 834 TOP-IPSA

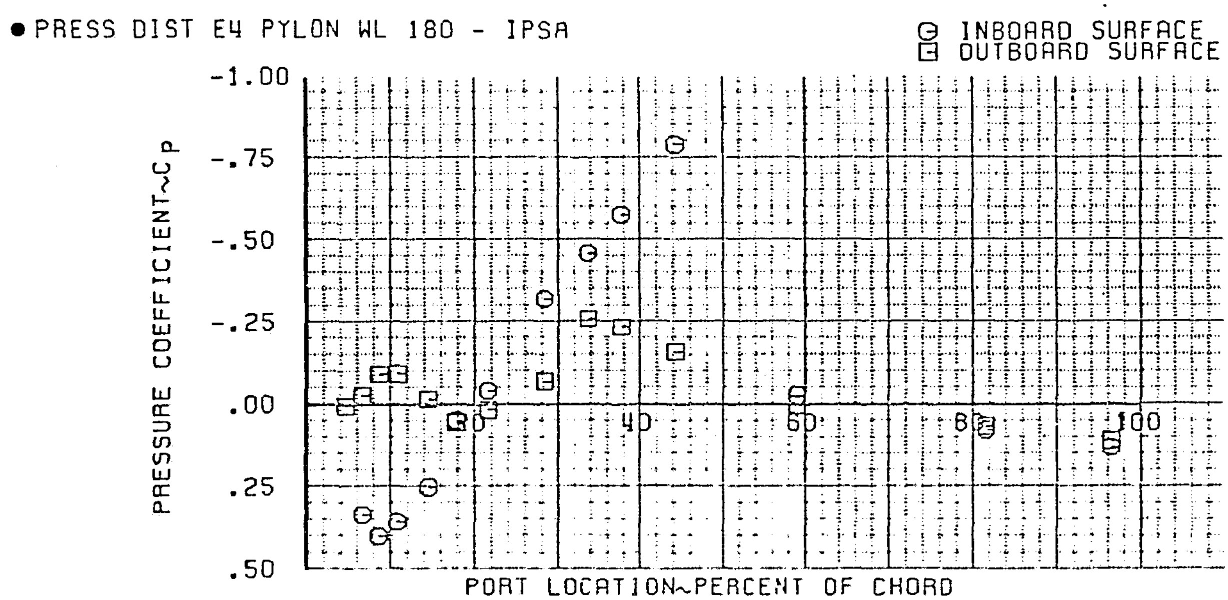


H_p	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12.162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

Figure B-10. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.004) (Continued)

125209-303

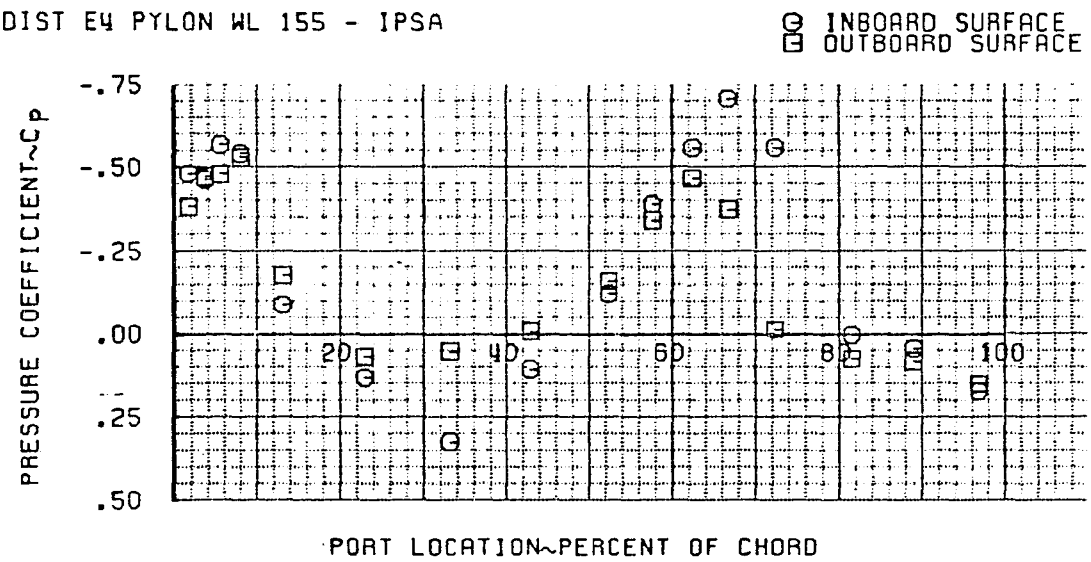


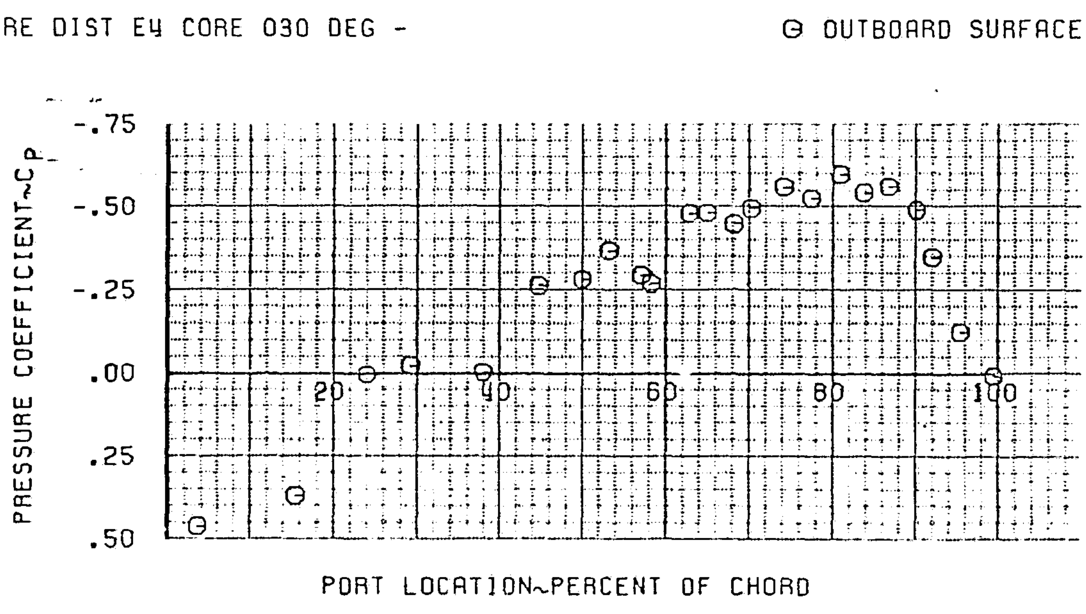


H_P	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12 162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

Figure B .0. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.004)(Continued)

125209-304



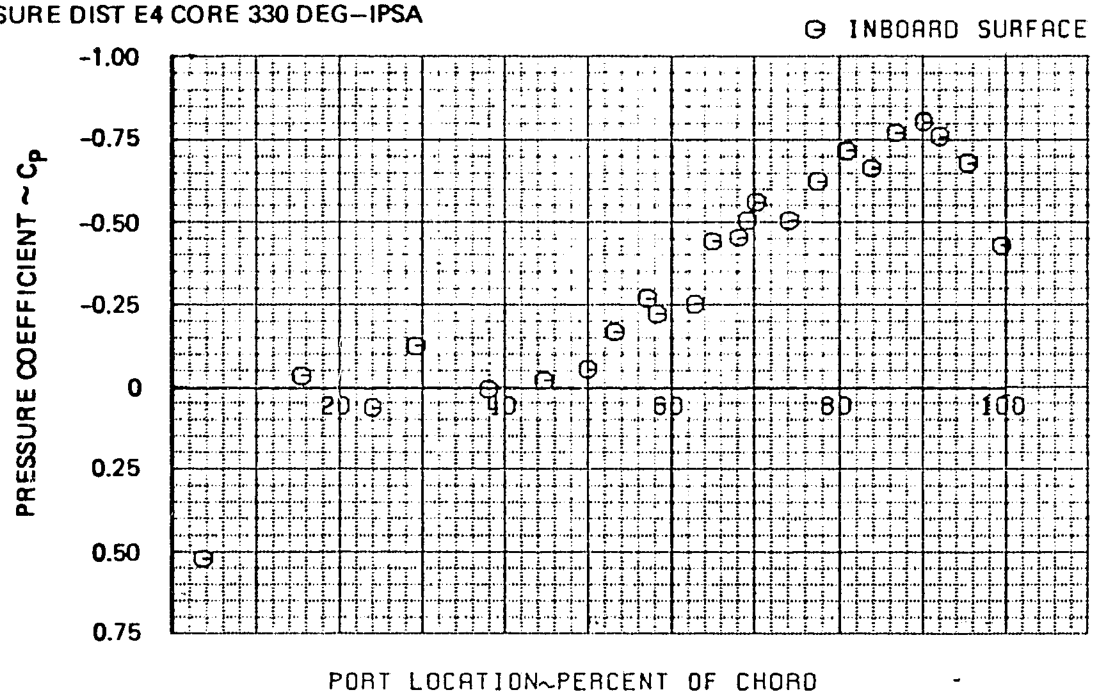


H_p	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12.162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

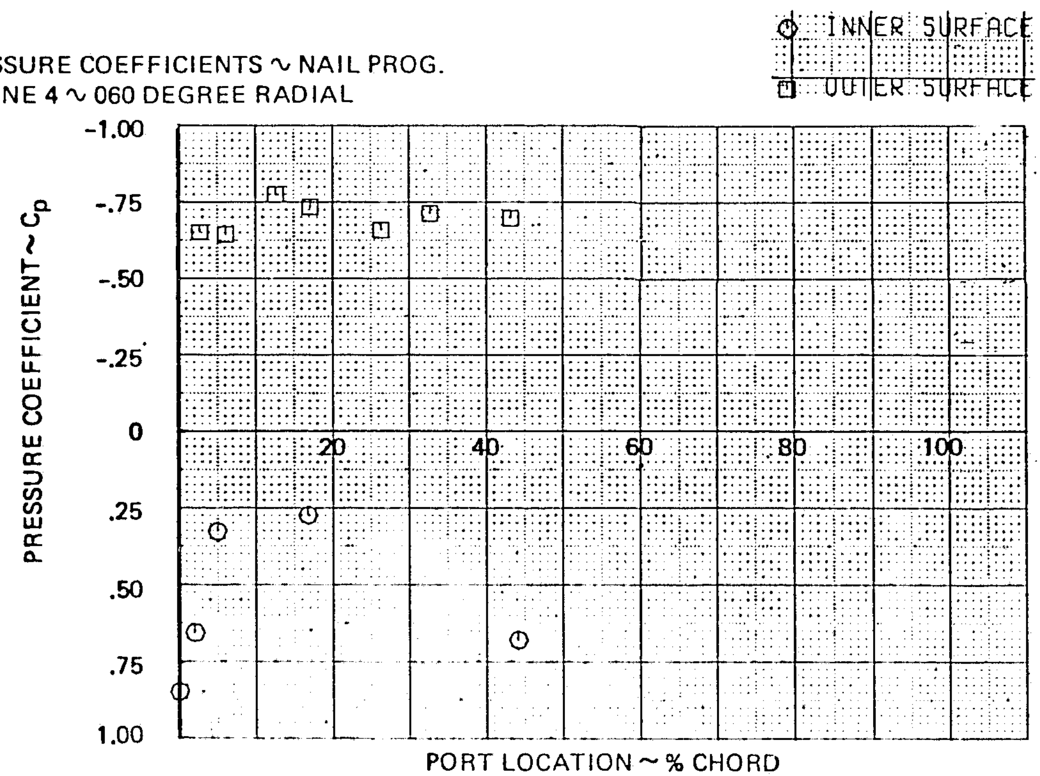
Figure B-10. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.004)(Continued)

125209-305

● PRESSURE DIST E4 CORE 330 DEG–IPSA



● PRESSURE COEFFICIENTS ~ NAIL PROG.
ENGINE 4 ~ 060 DEGREE RADIAL

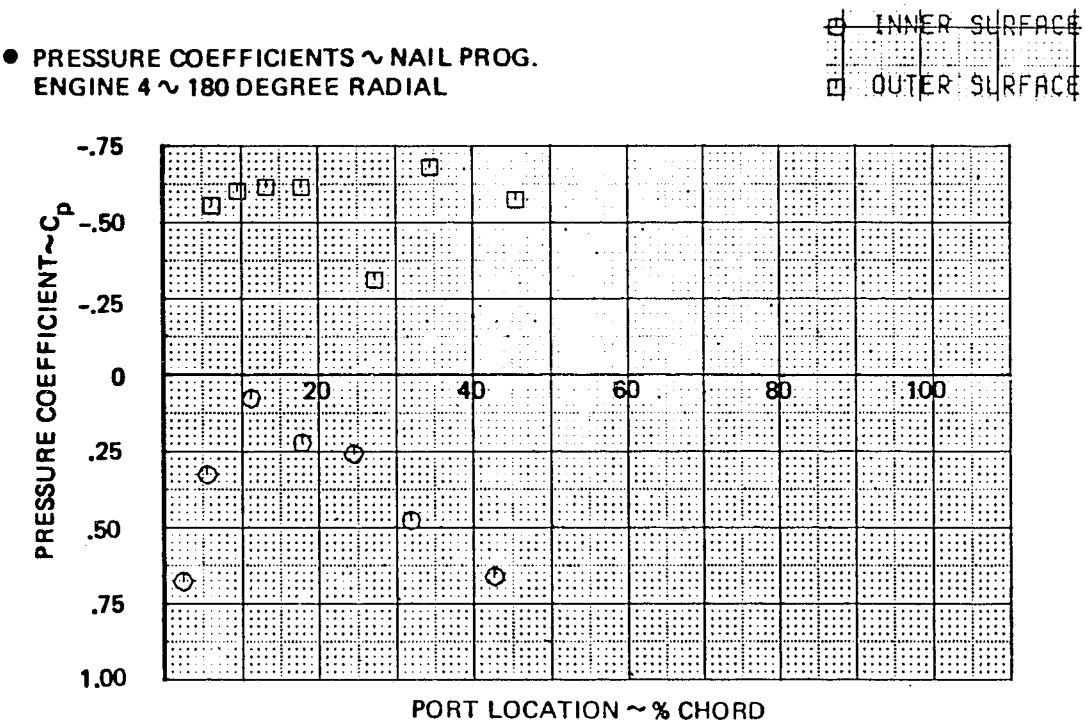


H_P	= 11 432m (37 505 ft)	M	= 0.906
GW	= 216 125 kg (476 473 lbm)	α	= 1.0 deg
Q	= 12.162 kPa (1.764 PSI)	FLAPS = 0 deg	
V_c	= 547.1 km/h (295.4 KTS)	LANDING GEAR UP	

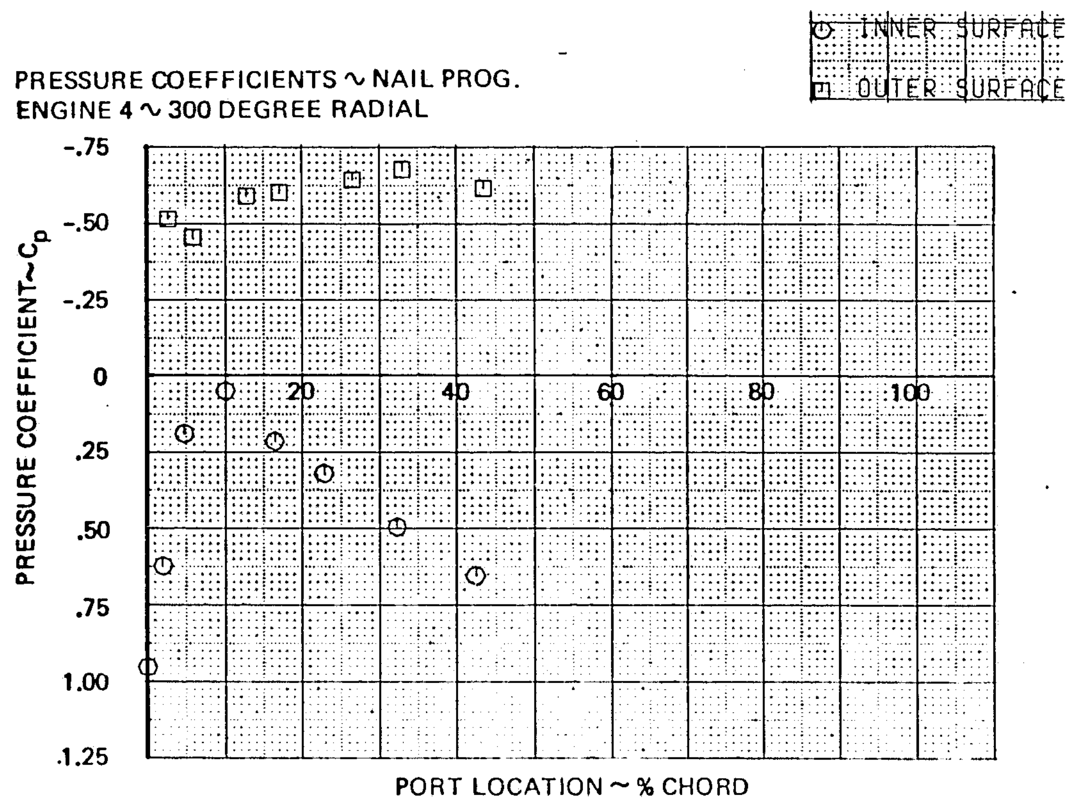
125209-306

Figure B-10. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.004)(Continued)

• PRESSURE COEFFICIENTS ∿ NAIL PROG.
ENGINE 4 ∿ 180 DEGREE RADIAL



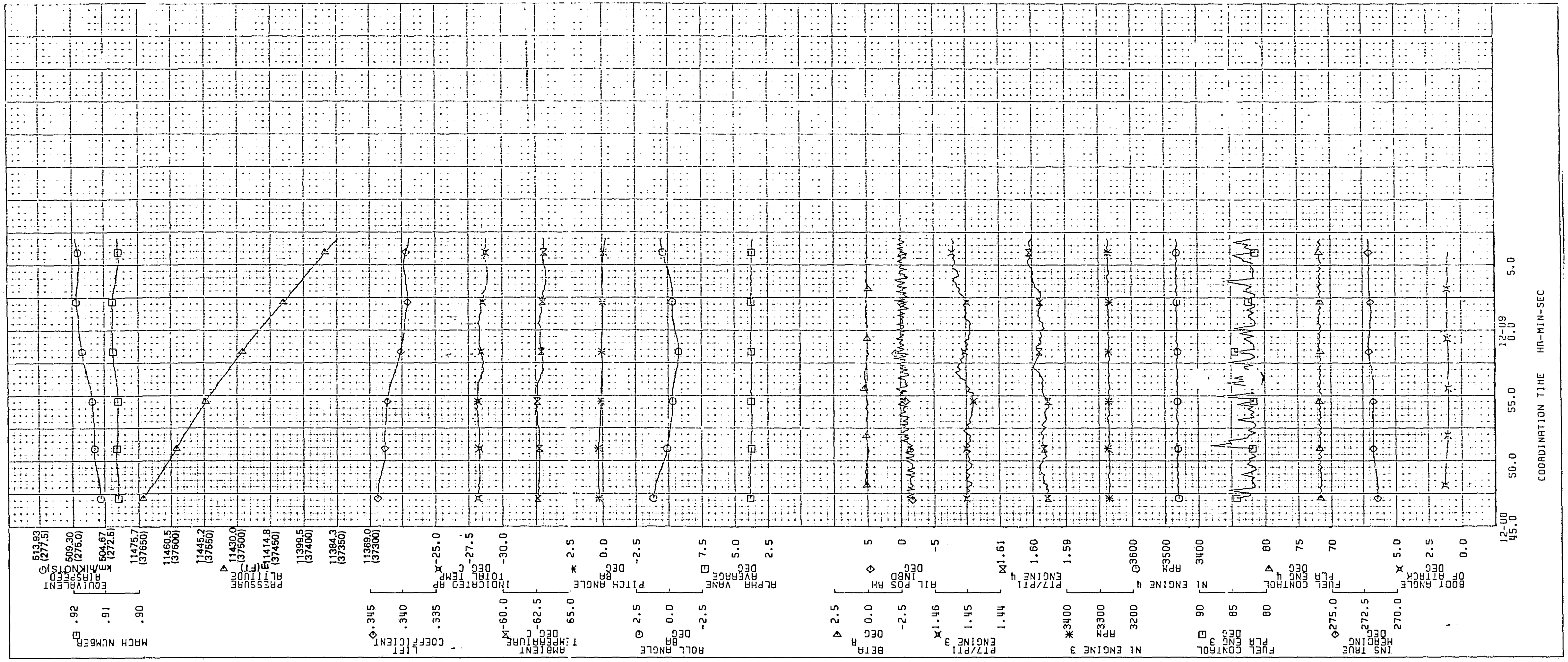
• PRESSURE COEFFICIENTS ∿ NAIL PROG.
ENGINE 4 ∿ 300 DEGREE RADIAL



H_p	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12.162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

125209-307

Figure B-10. Pressure Coefficient Plots (Test 273-15, Condition 1.00.137.004) (Continued)

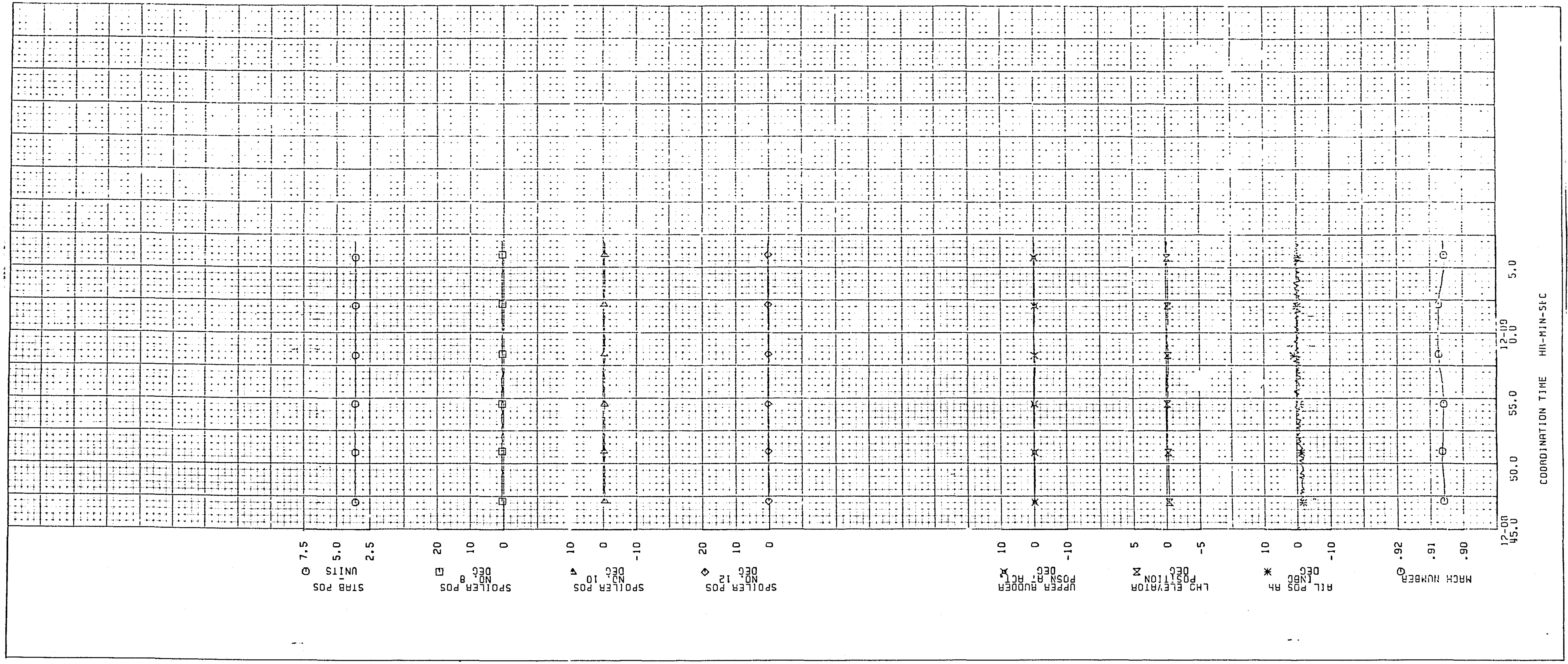


• CONDITION STABILITY

Hp	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12.162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

125209-308

Figure B-10. Pressure Coefficient Data (Test 273-15, Condition 1.00.137.004) (Continued)

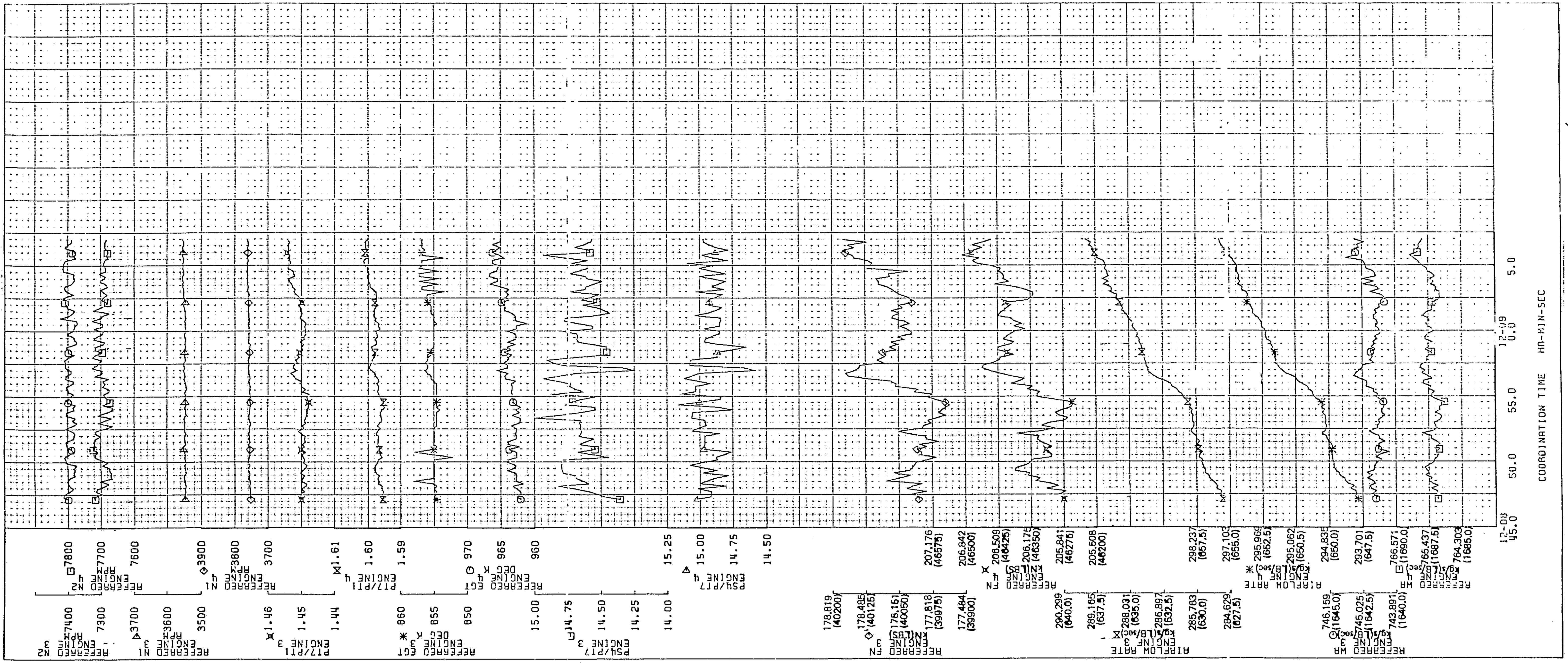


• CONTROL SURFACE POSITION

Hp	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12.162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

Figure B-10. Pressure Coefficient Data (Test 273-15, Condition 1.00.137.004) (Continued)

125209-310



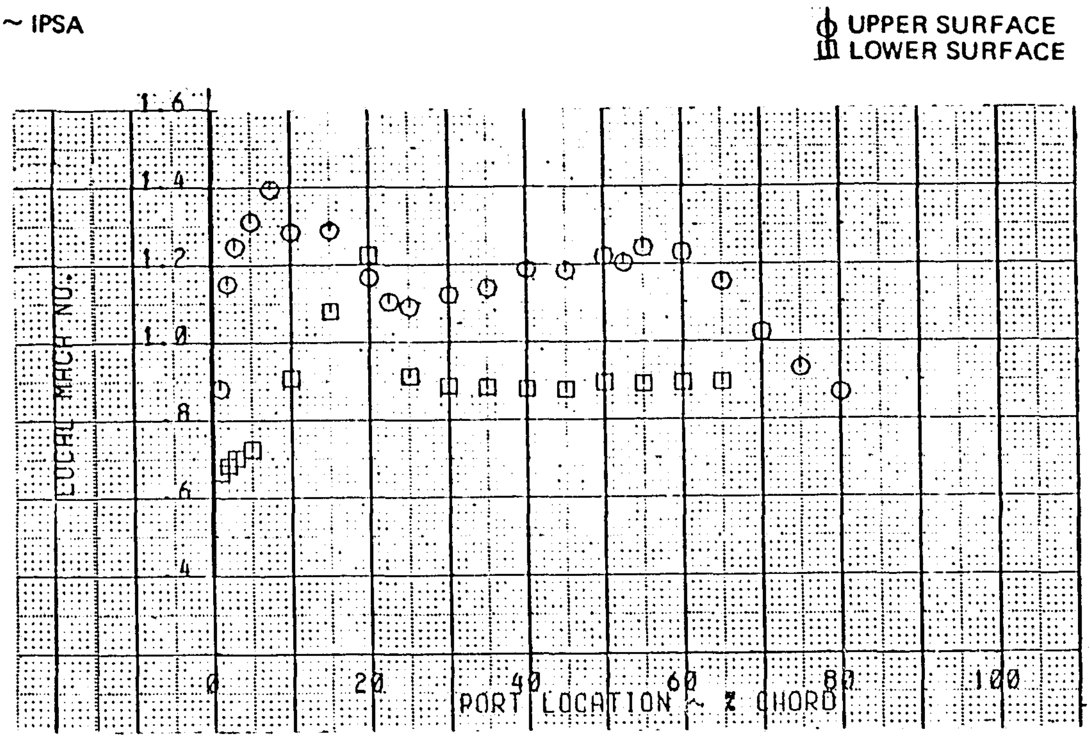
• ENGINE AIRFLOW

Hp	= 11 432m (37 505 ft)	M	= 0.906
GW	= 216 125 kg (476 473 lbm)	α	= 1.0 deg
Q	= 12.162 kPa (1.764 PSI)	FLAPS = 0 deg	
V_c	= 547.1 km/h (295.4 KTS)	LANDING GEAR UP	

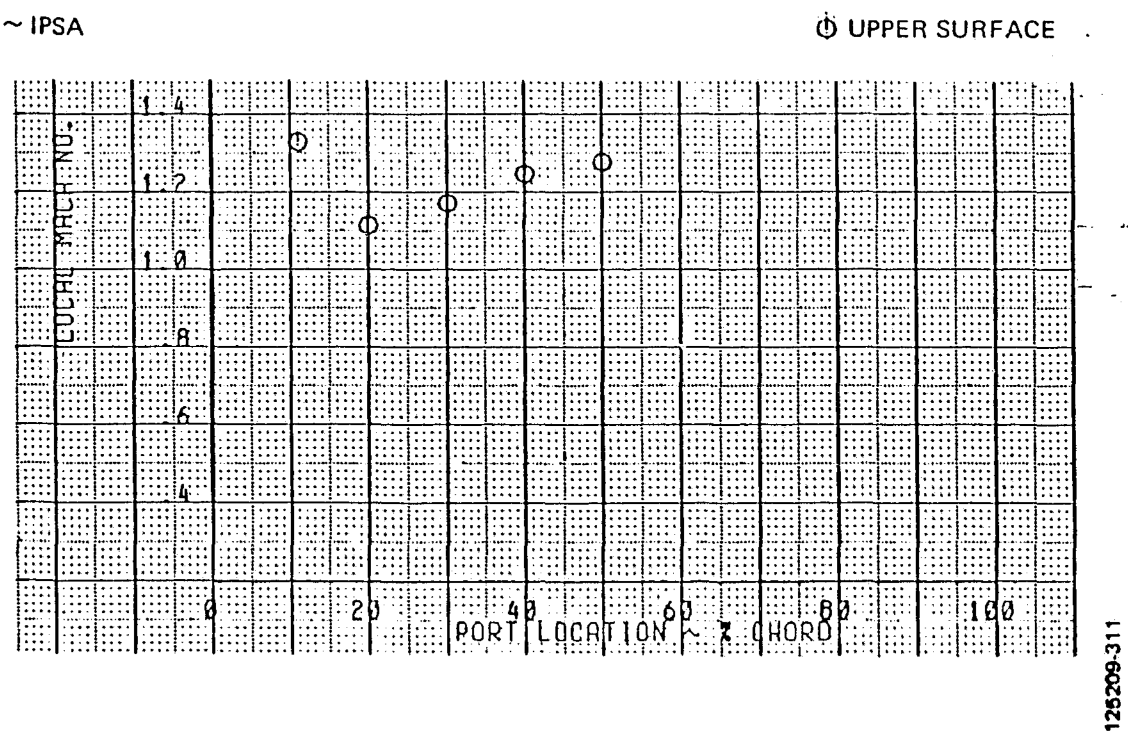
125208-309

Figure B-10. Pressure Coefficient Data (Test 273-15, Condition 1.00.137.004) (Concluded)

● WBL 445 ~ IPSA

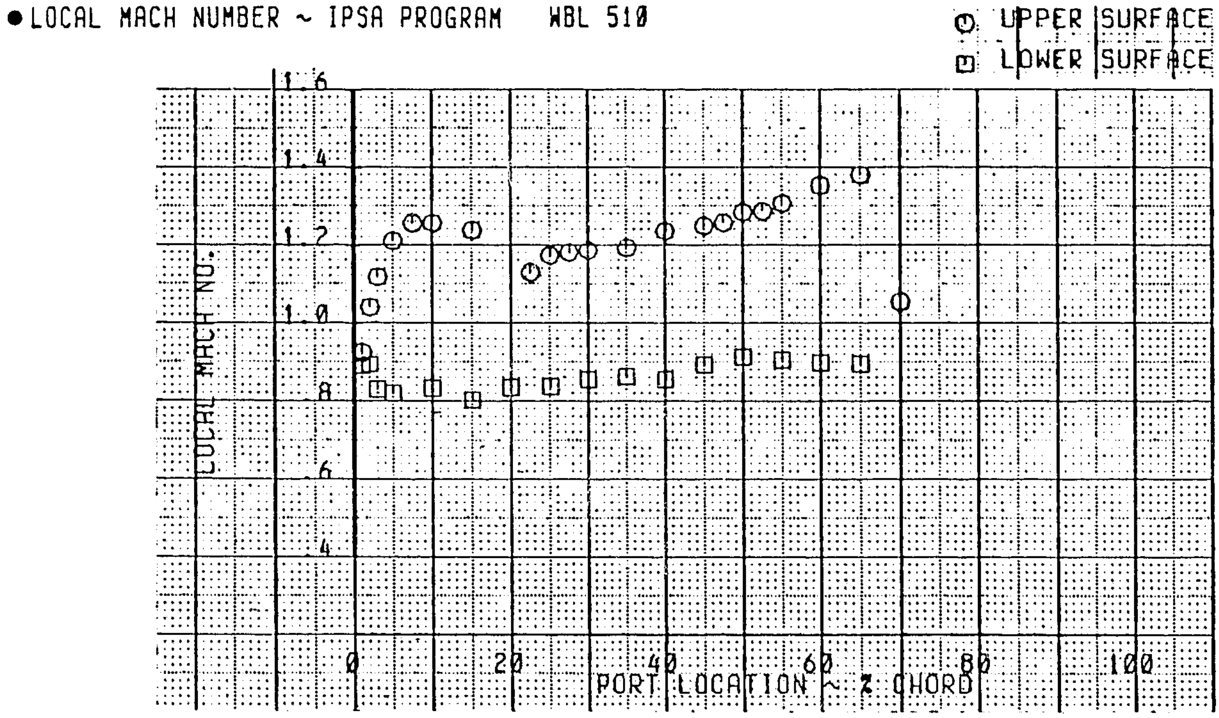


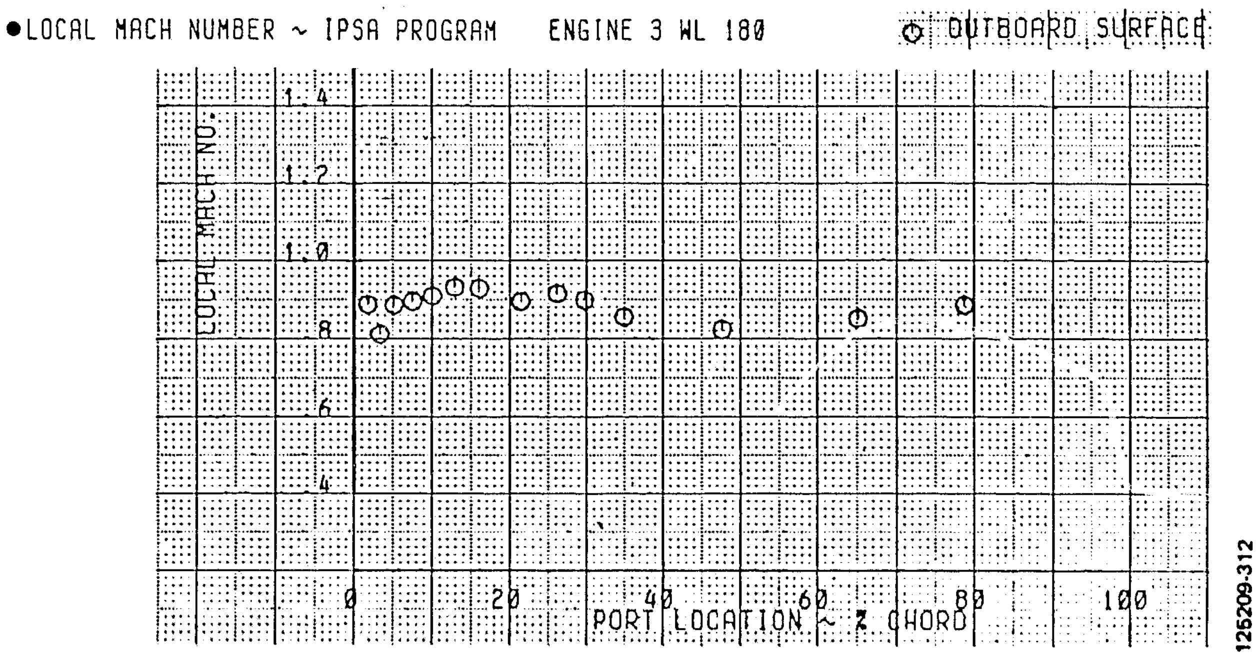
● WBL 470 ~ IPSA



Hp	=	12 270m (40 256 ft)	M	=	0.866
GW	=	206 025 kg (454 207 lbm)	α	=	1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS = 0 deg		
V_c	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP		

Figure B-11. Local Mach Number Plots (Test 273-09, Condition 1.00.137.001)

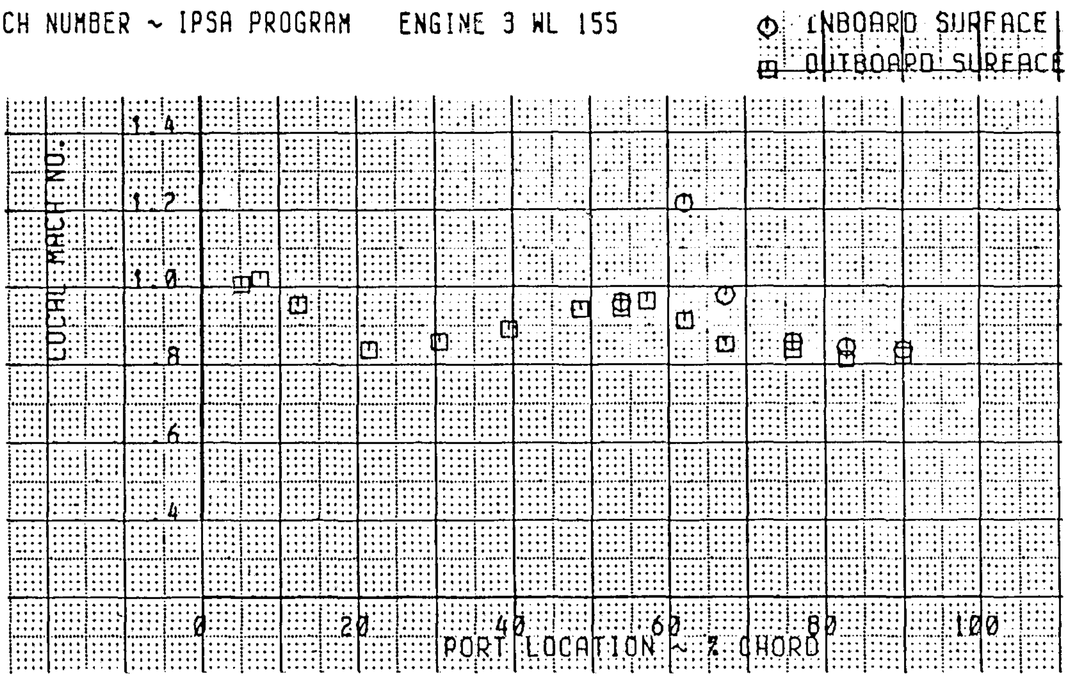




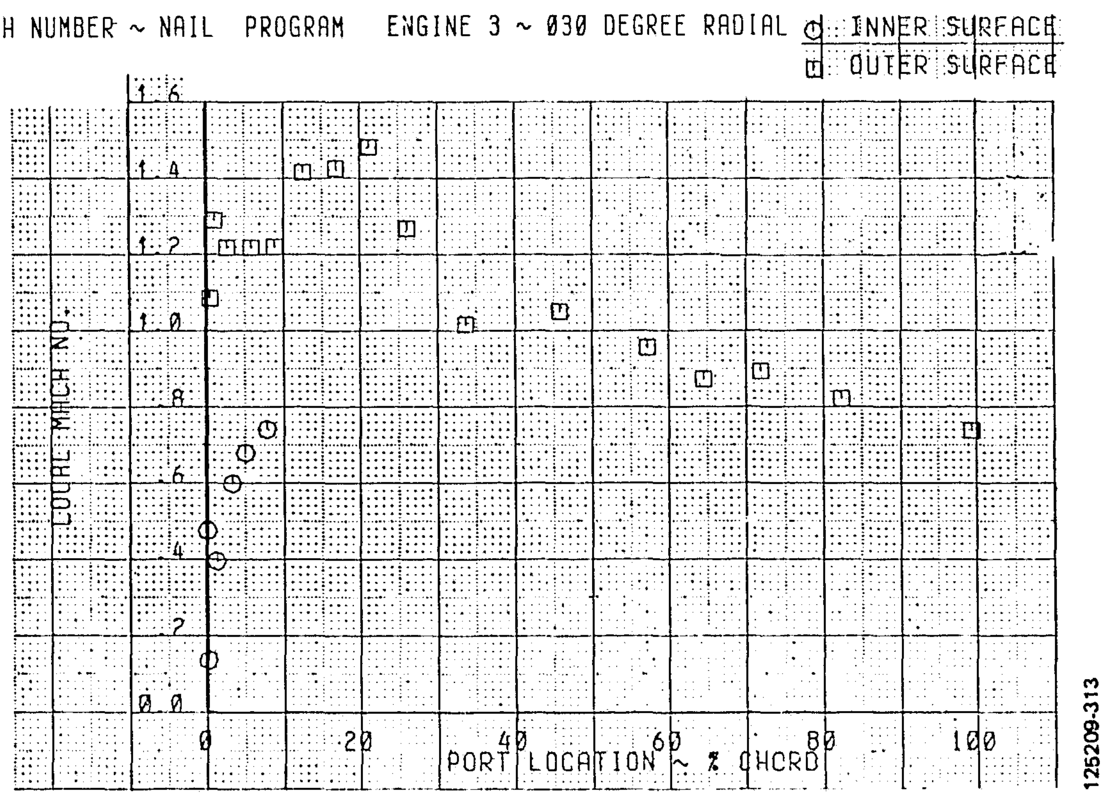
Hp	=	12 270m (40 256 ft)	M	=	0.866
GW	=	206 025 kg (454 207 lbm)	α	=	1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS	=	0 deg
V_c	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP		

Figure B-11. Local Mach Number Plots (Test 273-09, Condition 1.00.137.001)(Continued)

● LOCAL MACH NUMBER ~ IPSA PROGRAM   ENGINE 3 WL 155



● LOCAL MACH NUMBER ~ NAIL PROGRAM   ENGINE 3 ~ 030 DEGREE RADIAL

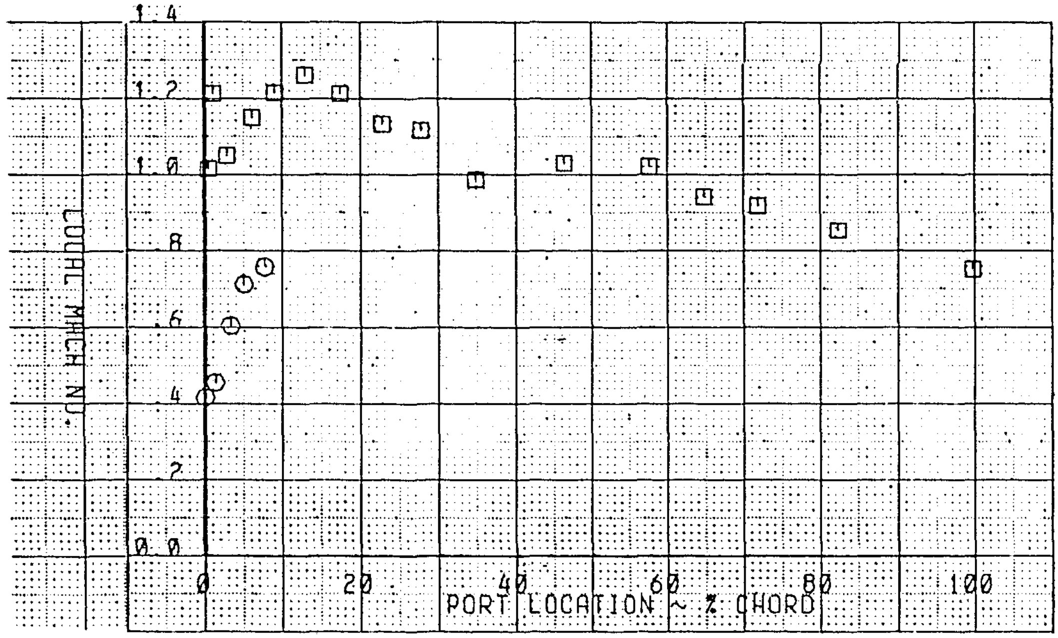


Hp	=	12 270m (40 256 ft)	M	=	0.866
GW	=	206 025 kg (454 207 lbm)	α	=	1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS = 0 deg		
V_c	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP		

Figure B-11. Local Mach Number Plots (Test 273-09, Condition 1.00.137.001)(Continued)

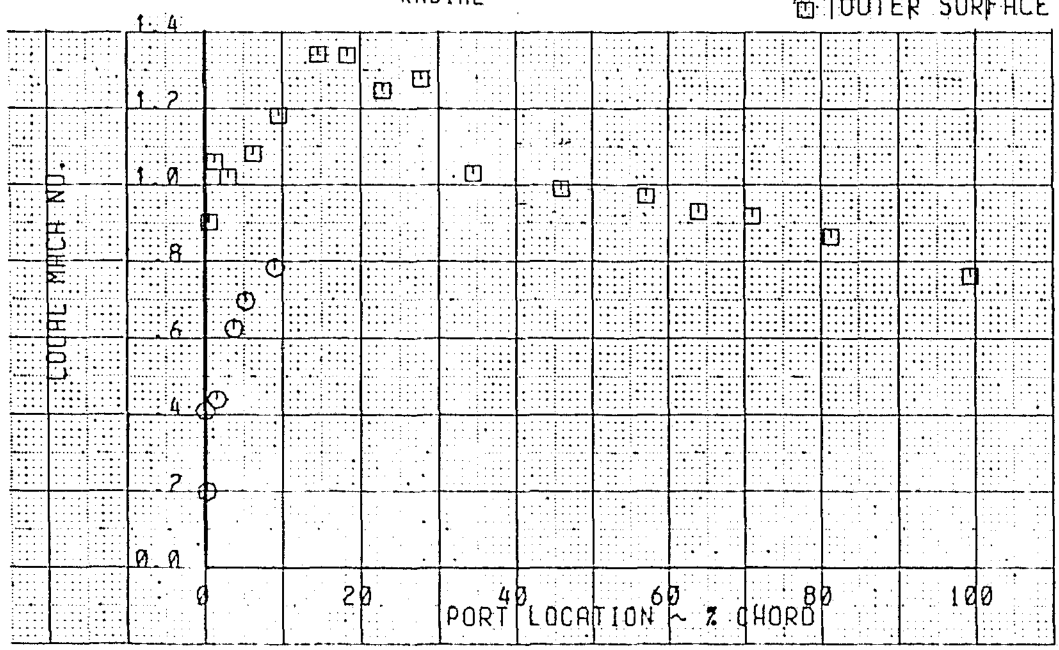
• LOCAL MACH NUMBER ~ NAIL PROGRAM ENGINE 3 ~ 090 DEGREE RADIAL

Ⓘ INNER SURFACE
⊡ OUTER SURFACE



• LOCAL MACH NUMBER ~ NAIL PROGRAM ENGINE 3 ~ 150 DEGREE RADIAL

Ⓘ INNER SURFACE
⊡ OUTER SURFACE

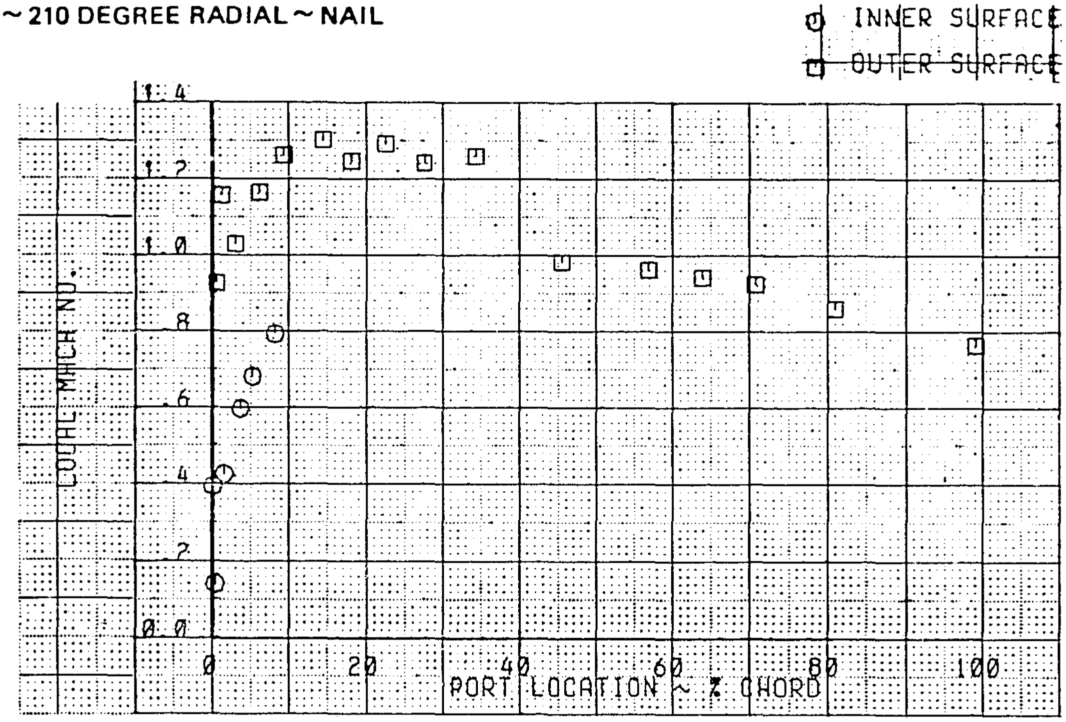


125209-314

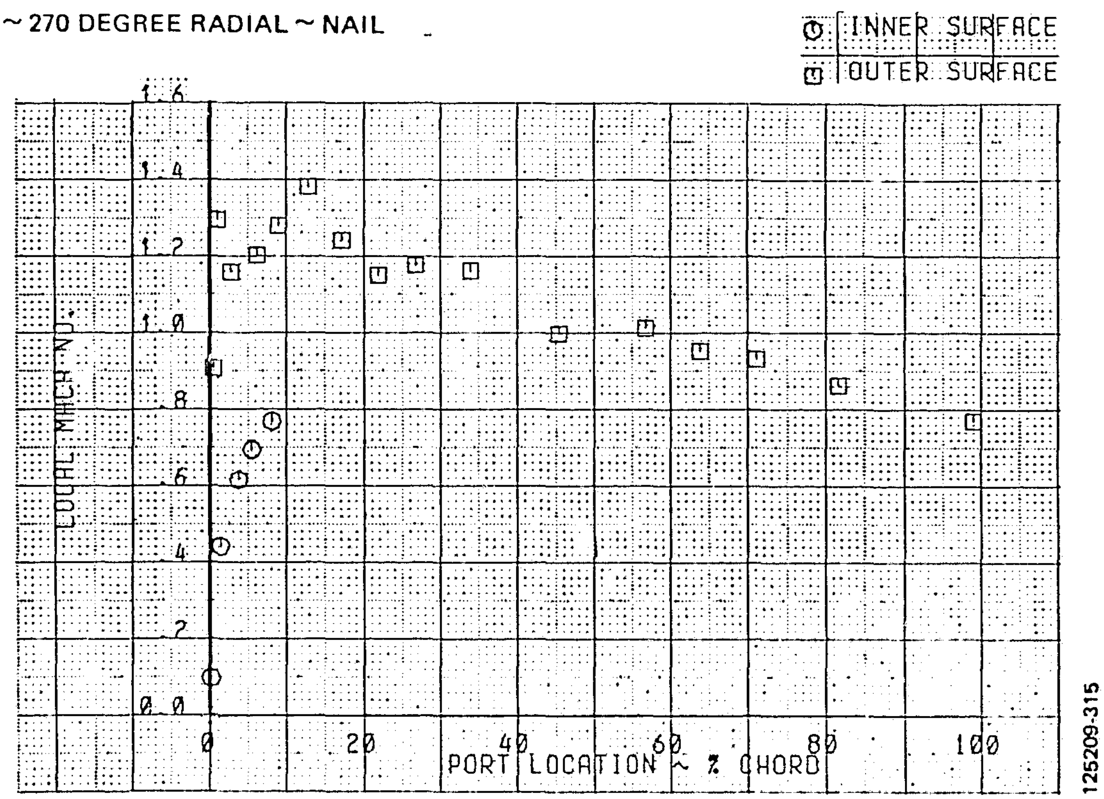
Hp	=	12 270m (40 256 ft)	M	=	0.866
GW	=	206 025 kg (454 207 lbm)	α	=	1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS = 0 deg		
V_c	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP		

Figure B-11. Local Mach Number Plots (Test 273-09, Condition 1.00.137.001)(Continued)

● ENGINE 3 ~ 210 DEGREE RADIAL ~ NAIL

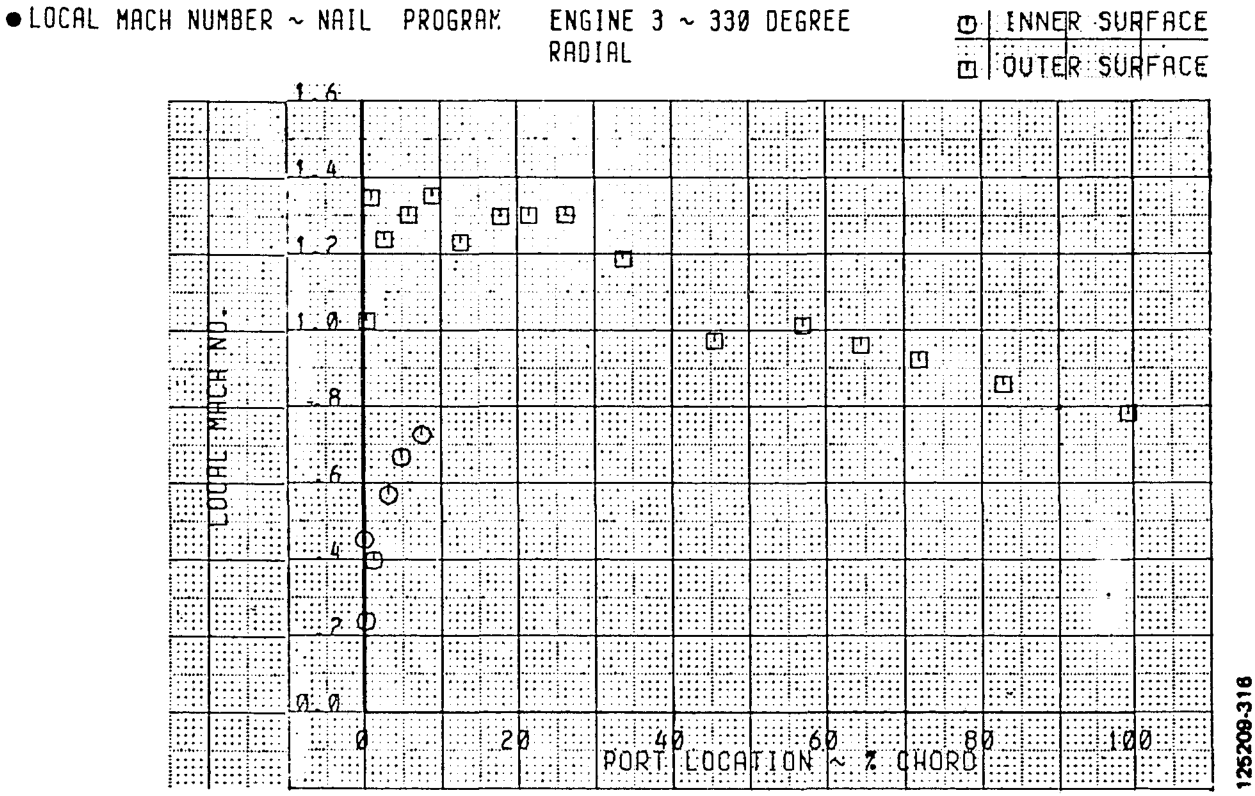


● ENGINE 3 ~ 270 DEGREE RADIAL ~ NAIL



Hp	=	12 270m (40 256 ft)	M	=	0.866
GW	=	206 025 kg (454 207 lbm)	α	=	1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS = 0 deg		
V_c	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP		

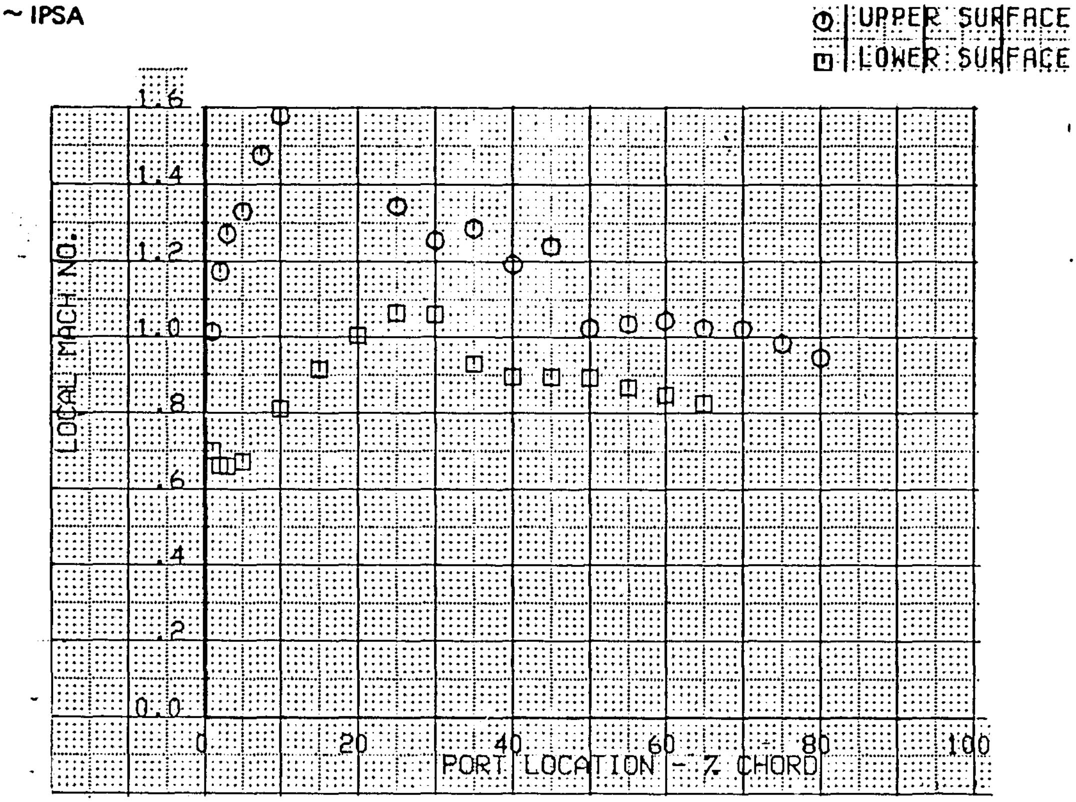
Figure B-11. Local Mach Number Plots (Test 273-09, Condition 1.00.137.001)(Continued)



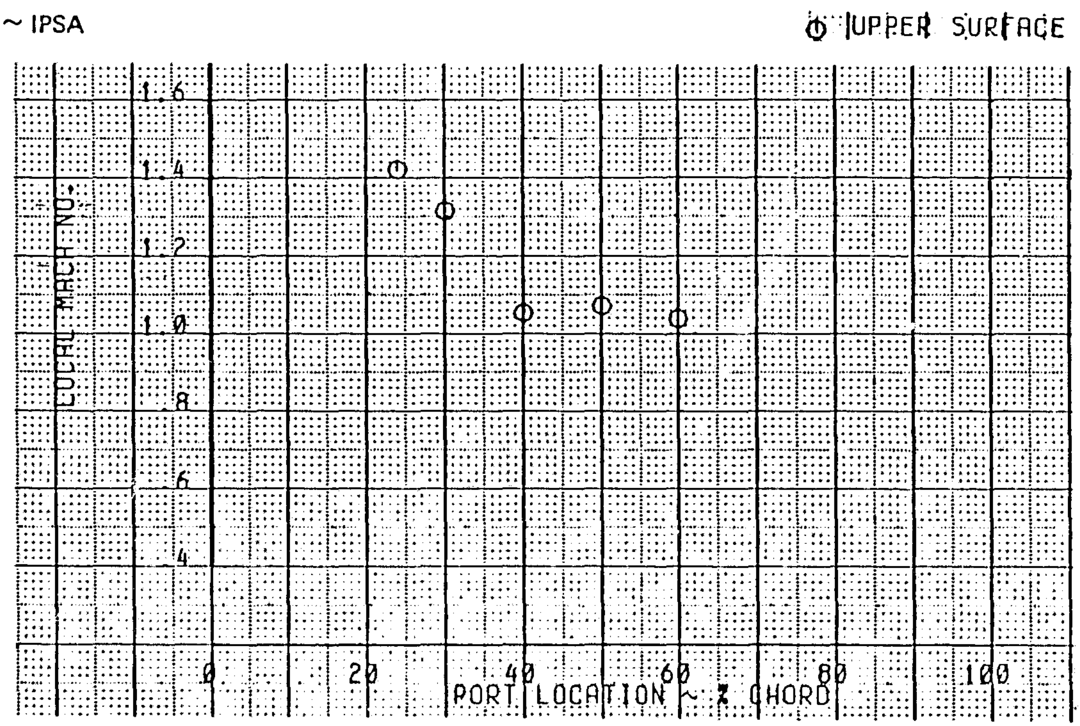
Hp	= 12 270m (40 256 ft)		M	= 0.866
GW	= 206 025 kg (454 207 lbm)		α	= 1.6 deg
Q	= 9.722 kPa (1.410 PSI)		FLAPS	= 0 deg
V_c	= 487.4 km/h (263.2 KTS)		LANDING GEAR UP	

Figure B-11. Local Mach Number Plots (Test 273-09, Condition 1.00.137.001)(Continued)

● WBL 809 ~ IPSA



● WBL 834 ~ IPSA

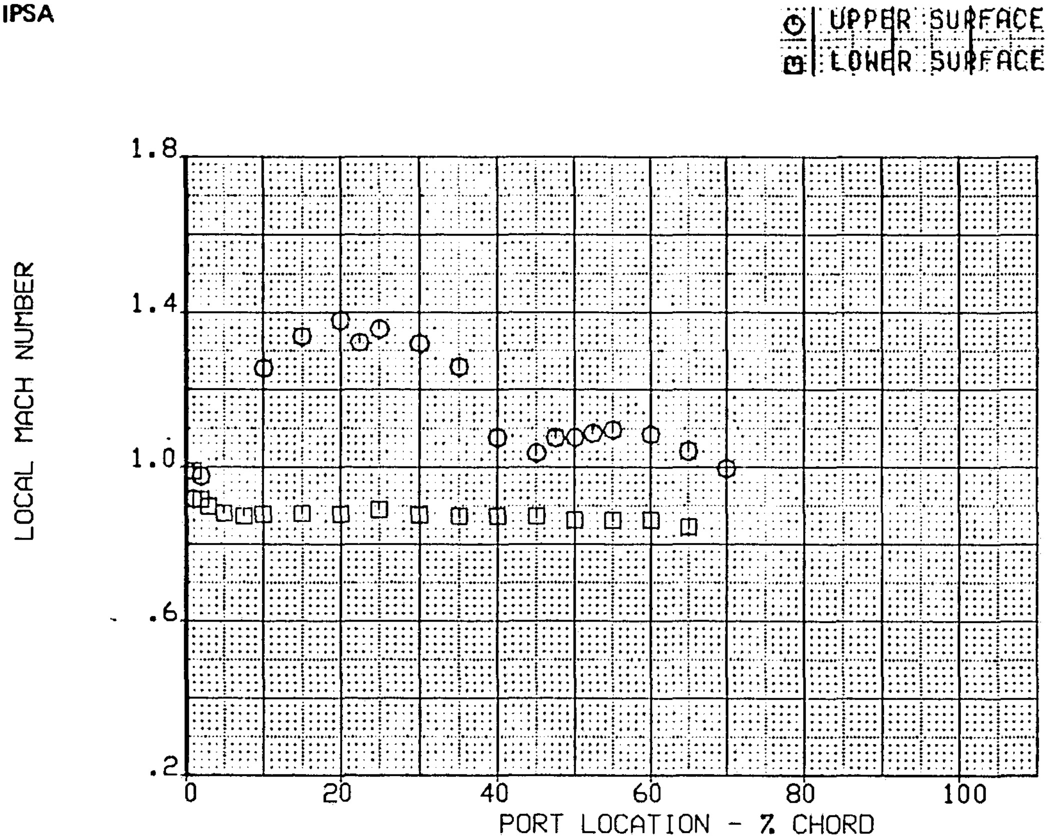


125209-317

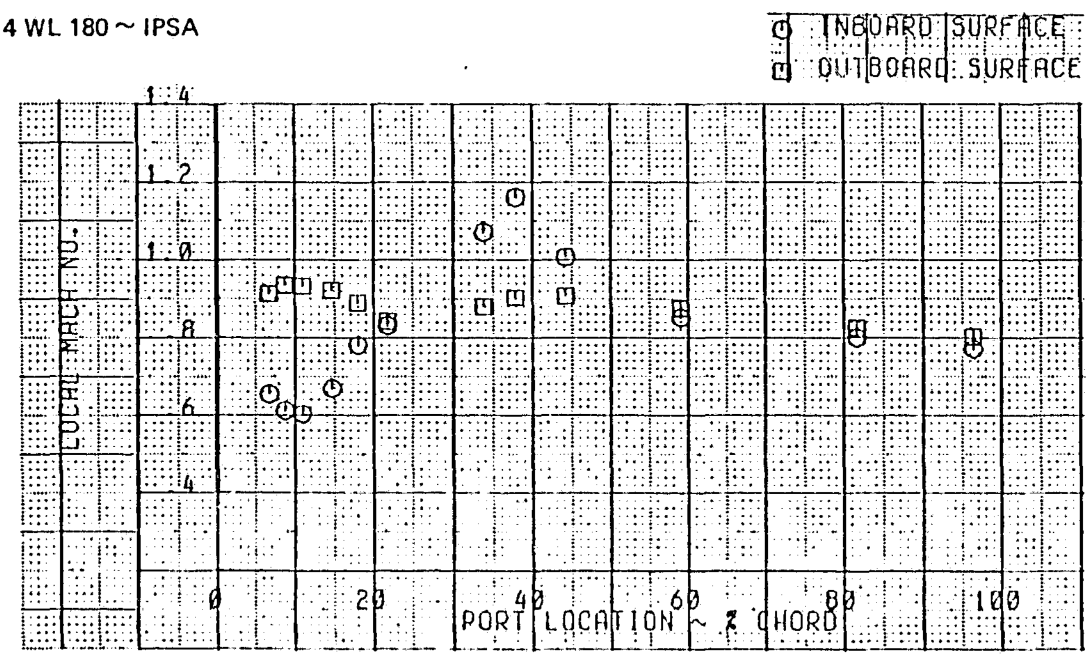
Hp	= 12 270m (40 256 ft)	M	= 0.866
GW	= 206 025 kg (454 207 lbm)	α	= 1.6 deg
Q	= 9.722 kPa (1.410 PSI)	FLAPS = 0 deg	
V_c	= 487.4 km/h (263.2 KTS)	LANDING GEAR UP	

Figure B-11. Local Mach Number Plots (Test 273-09, Condition 1.00.137.001)(Continued)

• WBL 870 ~ IPSA



• ENGINE 4 WL 180 ~ IPSA

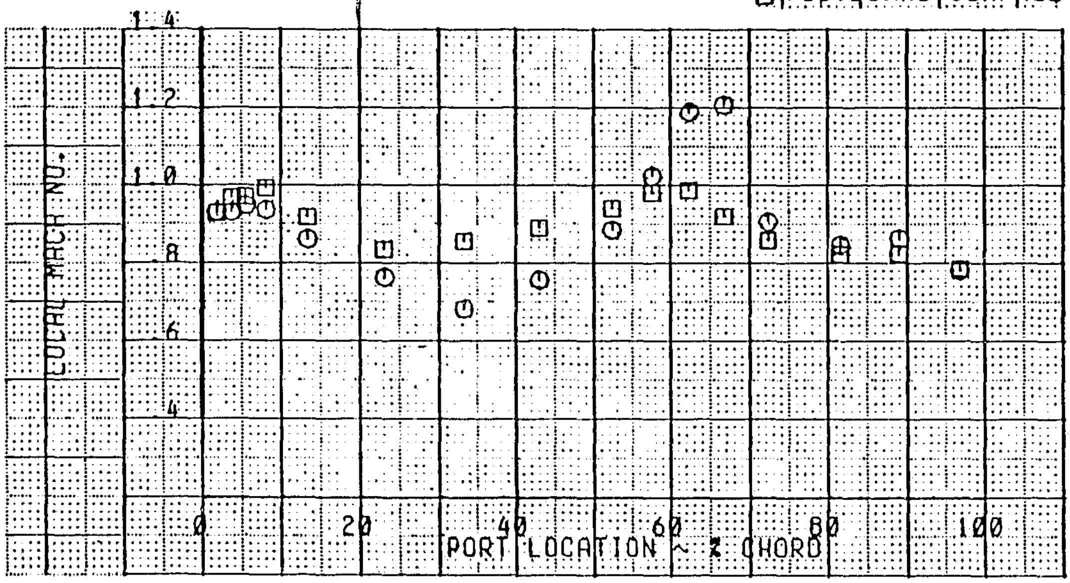


125209-318

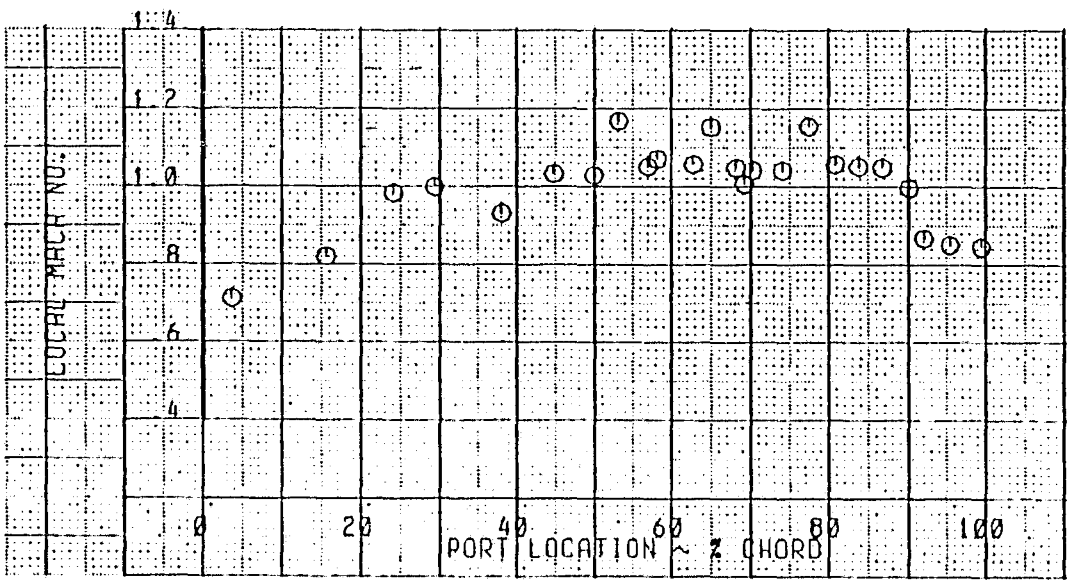
Hp	=	12 270m (40 256 ft)	M	=	0.866
GW	=	206 025 kg (454 207 lbm)	α	=	1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS = 0 deg		
V_c	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP		

Figure B-11. Local Mach Number Plots (Test 273-09, Condition 1.00.137.001)(Continued)

● LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 4 WL 155



● LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 4 CORE 030 DEG

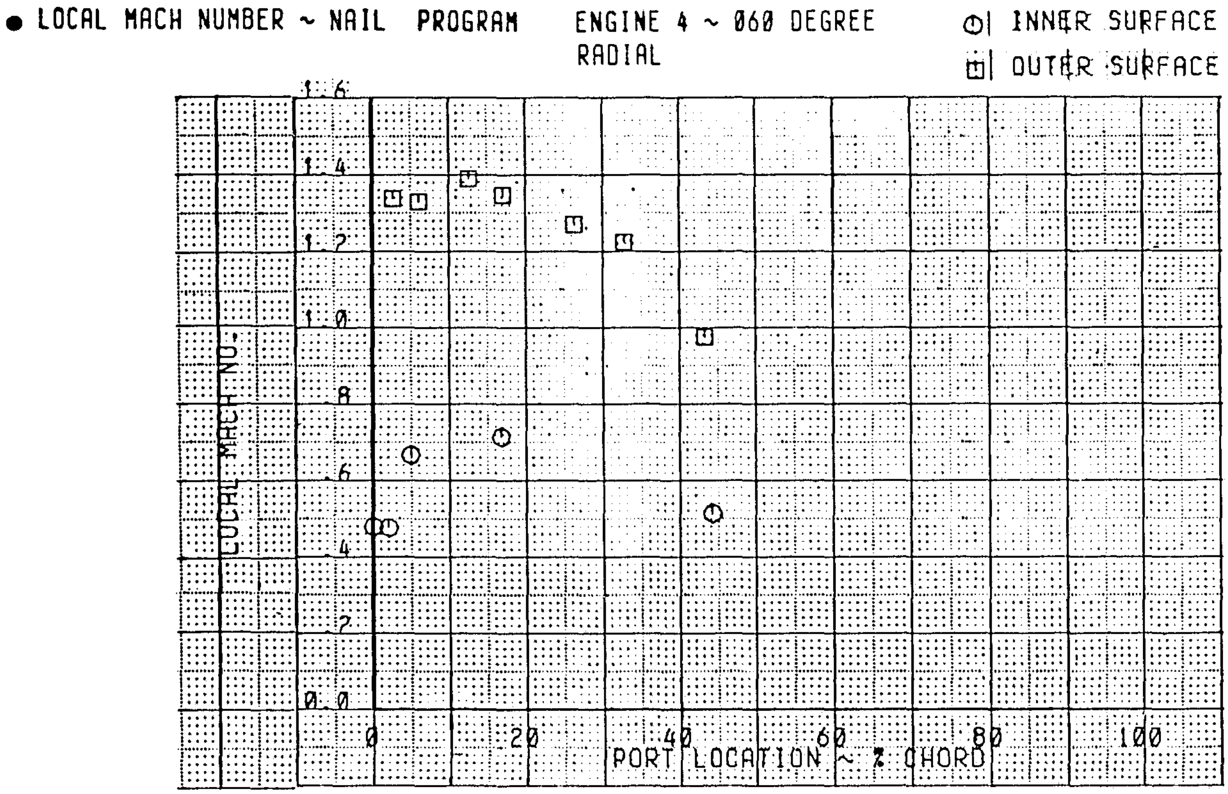


125209-319

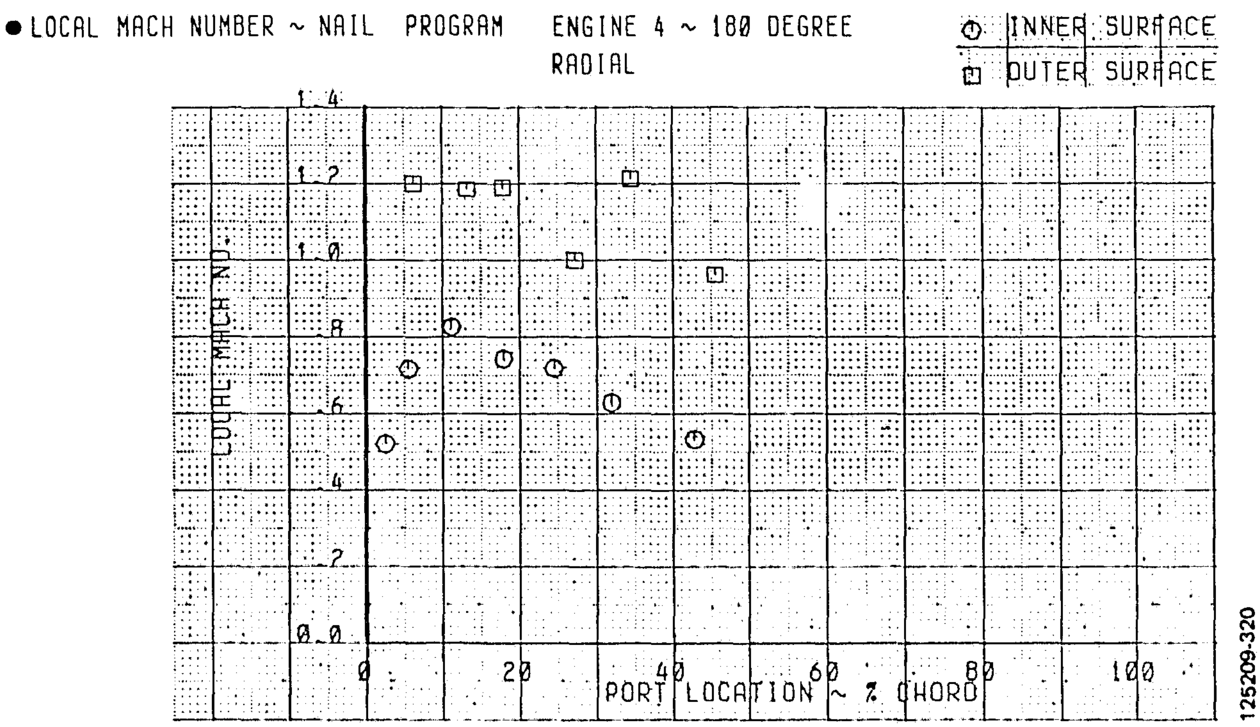
Hp	=	12 270m (40 256 ft)	M	=	0.866
GW	=	206 025 kg (454 207 lbm)	α	=	1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS	=	0 deg
V_c	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP		

Figure B-11. Local Mach Number Plots (Test 273-09, Condition 1.00.137.001)(Continued)

• LOCAL MACH NUMBER ~ NAIL PROGRAM ENGINE 4 ~ 060 DEGREE RADIAL

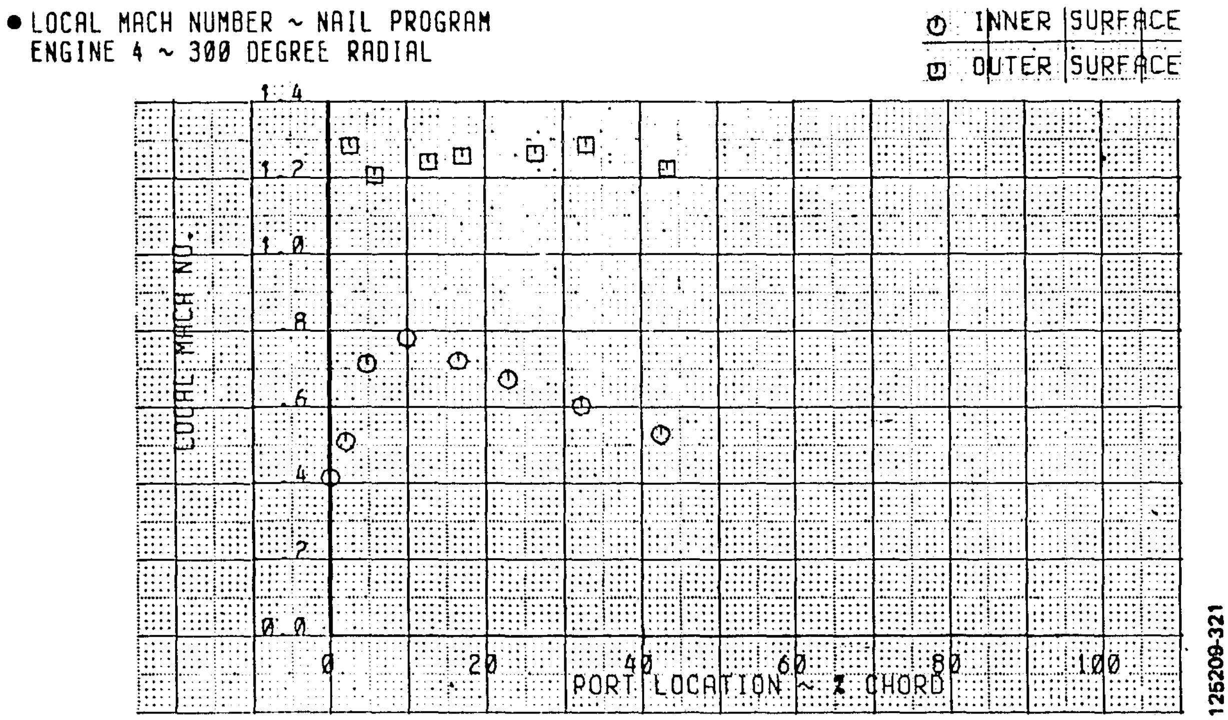


• LOCAL MACH NUMBER ~ NAIL PROGRAM ENGINE 4 ~ 180 DEGREE RADIAL



Hp	=	12 270m (40 256 ft)	M	=	0.866
GW	=	206 025 kg (454 207 lbm)	α	=	1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS = 0 deg		
V_c	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP		

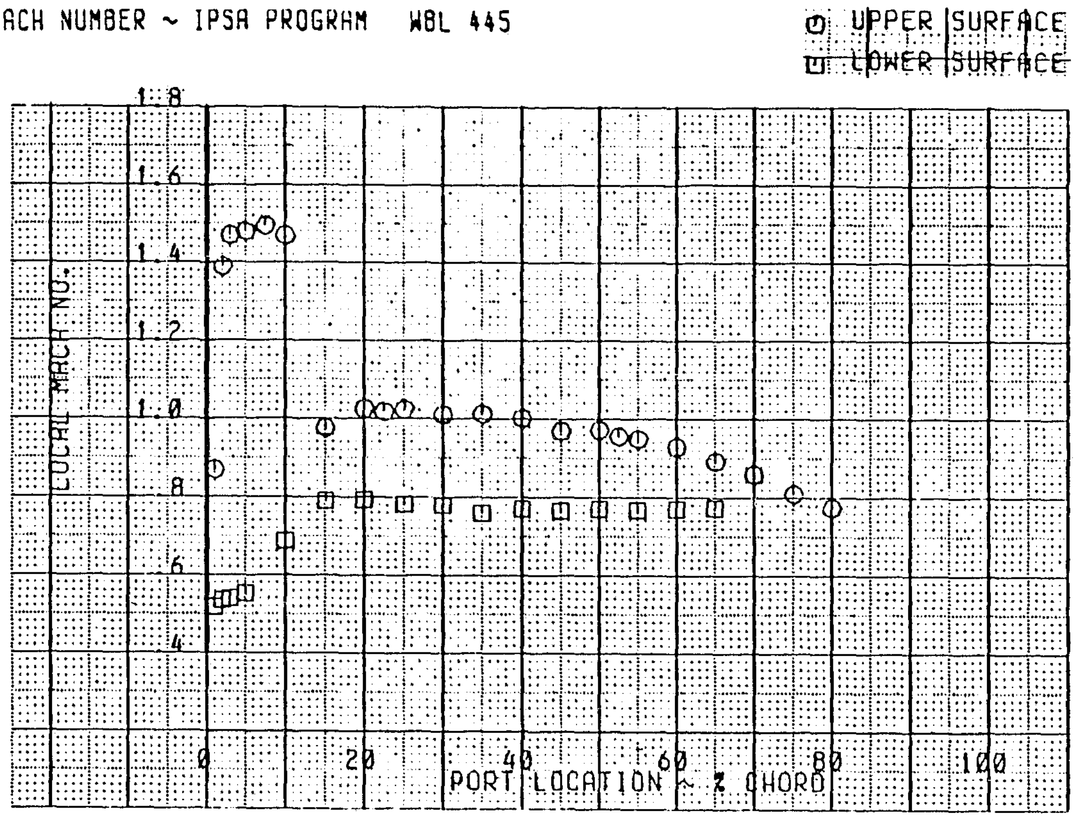
Figure B-11. Local Mach Number Plots (Test 273-09, Condition 1.00.137.001) (Continued)



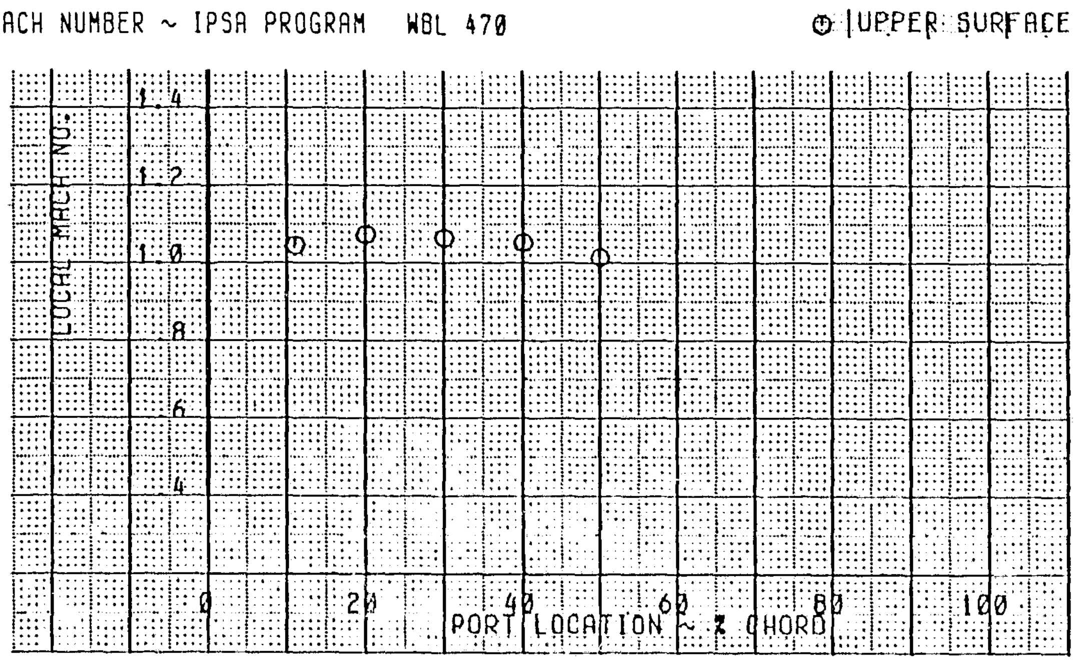
H_p	=	12 270m (40 256 ft)	M	= 0.866
GW	=	206 025 kg (454 207 lbm)	α	= 1.6 deg
Q	=	9.722 kPa (1.410 PSI)	FLAPS = 0 deg	
V_c	=	487.4 km/h (263.2 KTS)	LANDING GEAR UP	

Figure B-11. Local Mach Number Plots (Test 273-09, Condition 1.00.137.001) (Concluded)

● LOCAL MACH NUMBER ~ IPSA PROGRAM WBL 445



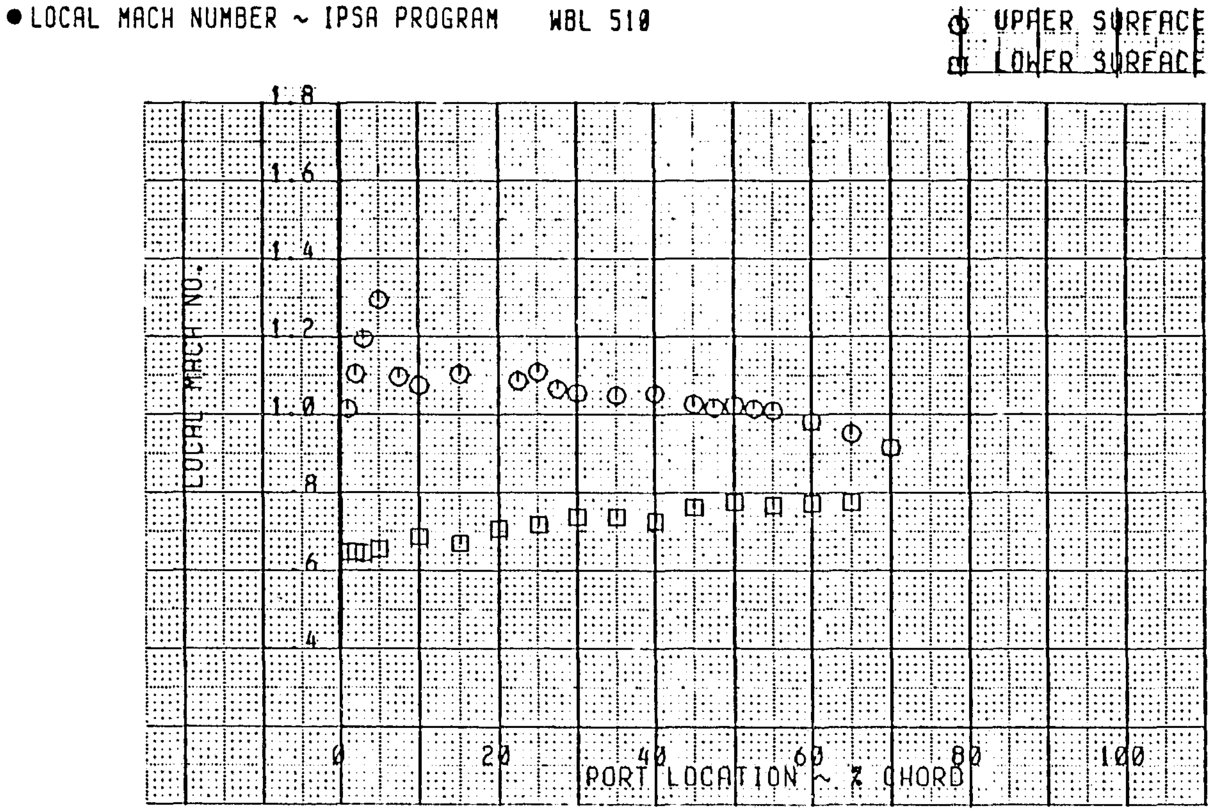
● LOCAL MACH NUMBER ~ IPSA PROGRAM WBL 470

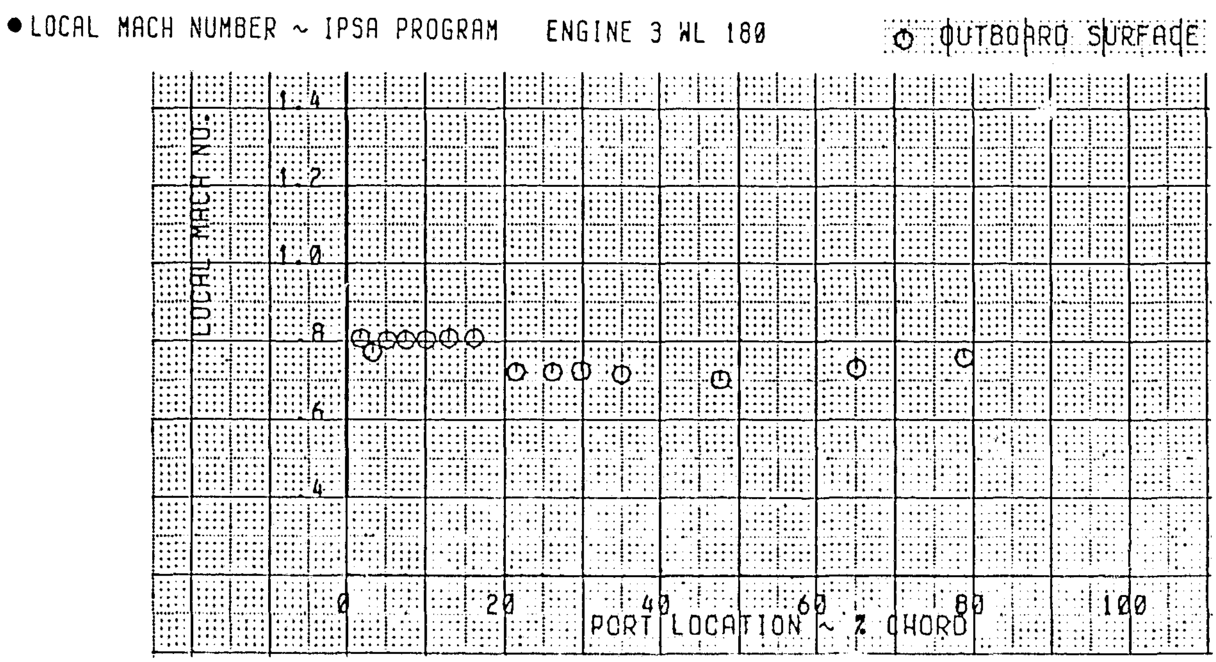


Hp	=	12 478m (40 938 ft)	M	=	0.767
GW	=	199 769 kg (440 393 lbm)	α	=	3.3 deg
Q	=	7.384 kPa (1.071 PSI)	FLAPS	=	0 deg
V_c	=	418.7 km/h (226.1 KTS)	LANDING GEAR UP		

125209-322

Figure B-12. Local Mach Number Plots (Test 273-09, Condition 1.00.137.002.1)



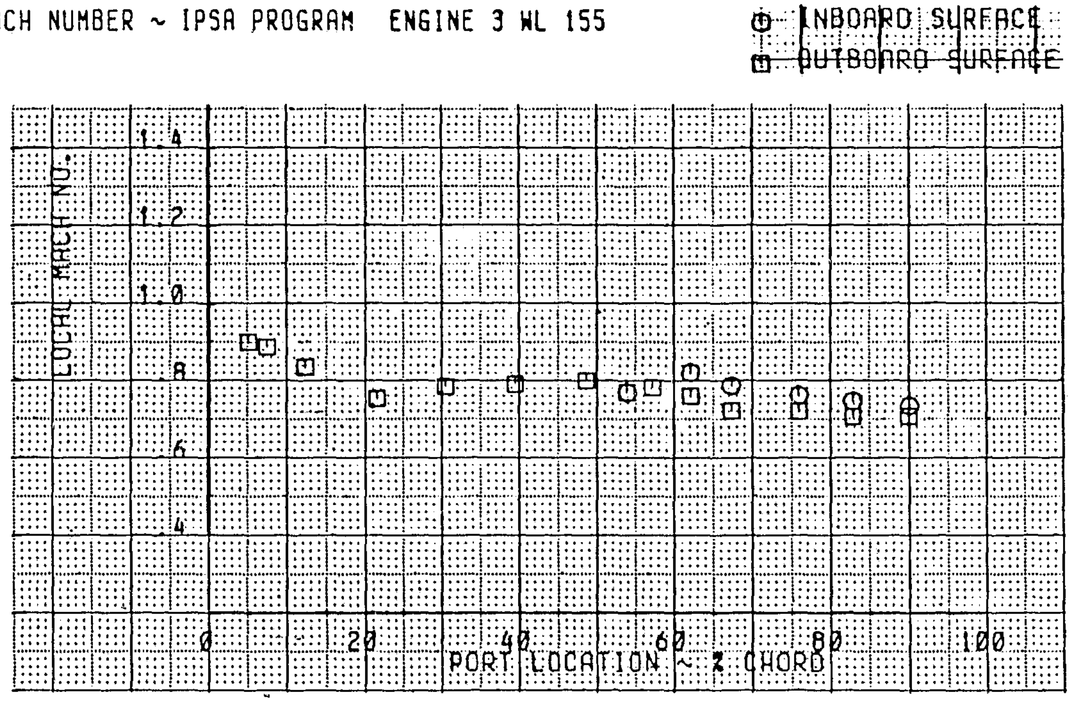


Hp	= 12 478m (40 938 ft)	M	= 0.767
GW	= 199 759 kg (440 393 lbm)	α	= 3.3 deg
Q	= 7.384 kPa (1.071 PSI)	FLAPS = 0 deg	
V_c	= 418.7 km/h (226.1 KTS)	LANDING GEAR UP	

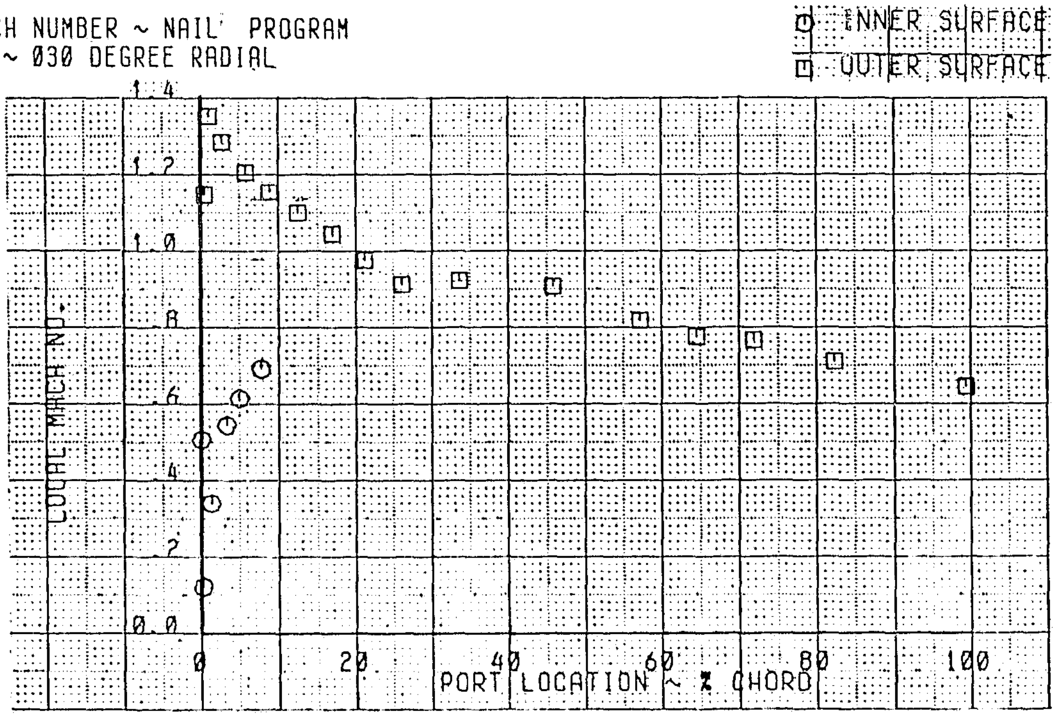
125209-323

Figure B-12. Local Mach Number Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

• LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 3 WL 155



• LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 3 ~ 030 DEGREE RADIAL

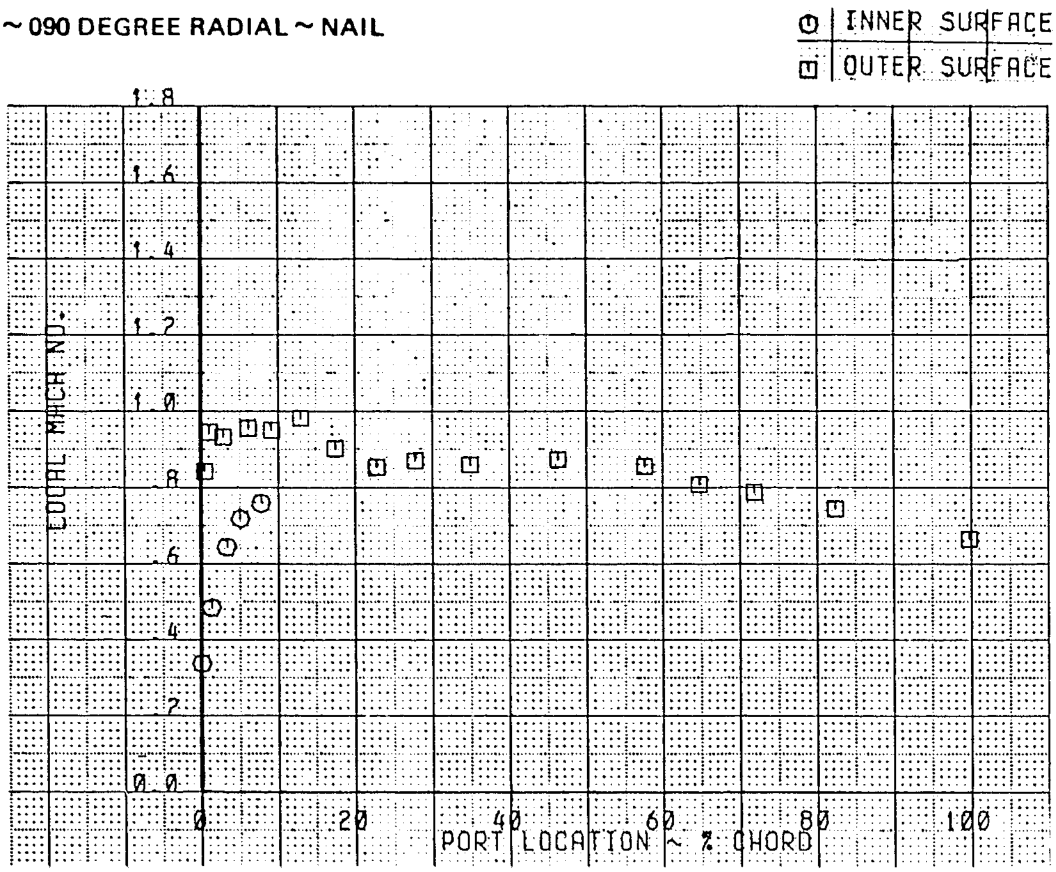


H_p = 12 478m (40 938 ft)		M = 0.767	
GW = 199 759 kg (440 393 lbm)		α = 3.3 deg	
Q = 7.384 kPa (1.071 PSI)		FLAPS = 0 deg	
V_c = 418 7 km/h (226.1 KTS)		LANDING GEAR UP	

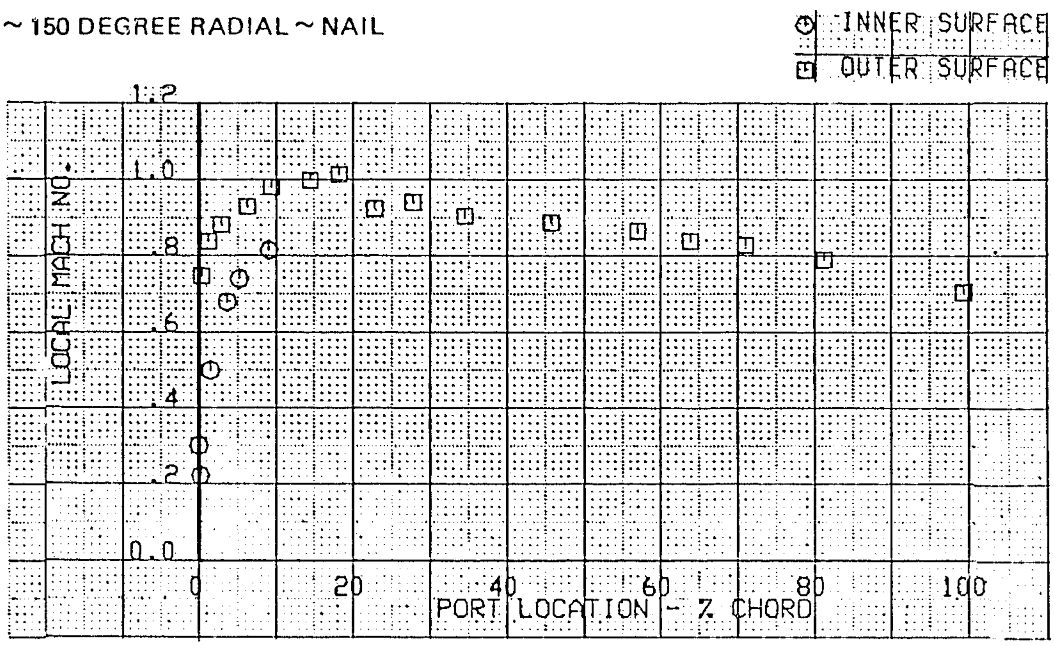
125209-324

Figure B-12. Local Mach Number Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

● ENGINE 3 ~ 090 DEGREE RADIAL ~ NAIL



● ENGINE 3 ~ 150 DEGREE RADIAL ~ NAIL

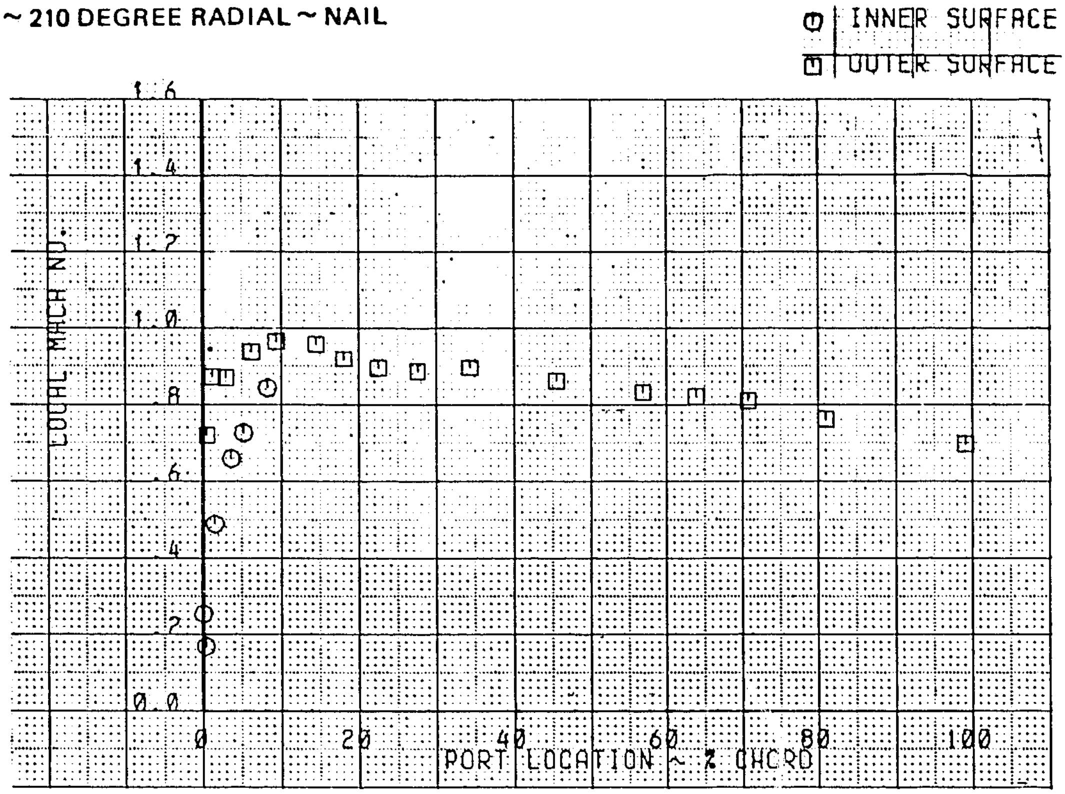


Hp	=	12 478m (40 938 ft)	M	=	0.767
GW	=	199 759 kg (440 393 lbm)	α	=	3.3 deg
Q	=	7 384 kPa (1.071 PSI)	FLAPS = 0 deg		
V_c	=	418.7 km/h (226 1 KTS)	LANDING GEAR UP		

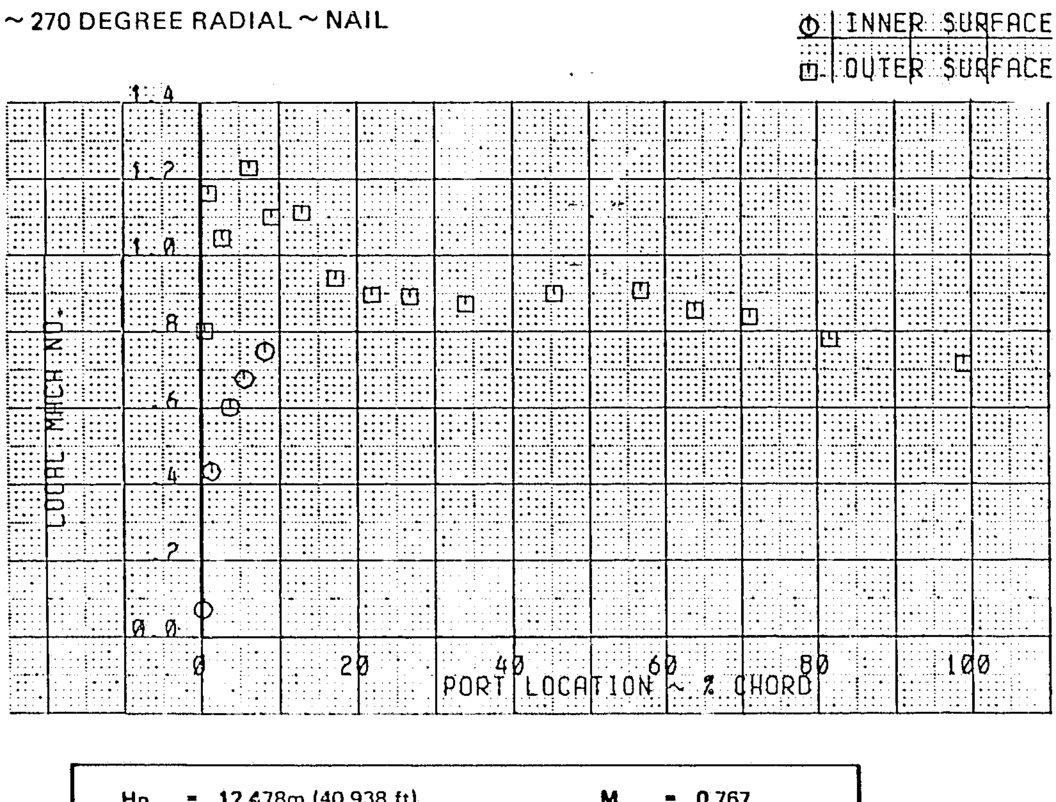
125209-325

Figure B-12. Local Mach Number Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

● ENGINE 3 ~ 210 DEGREE RADIAL ~ NAIL



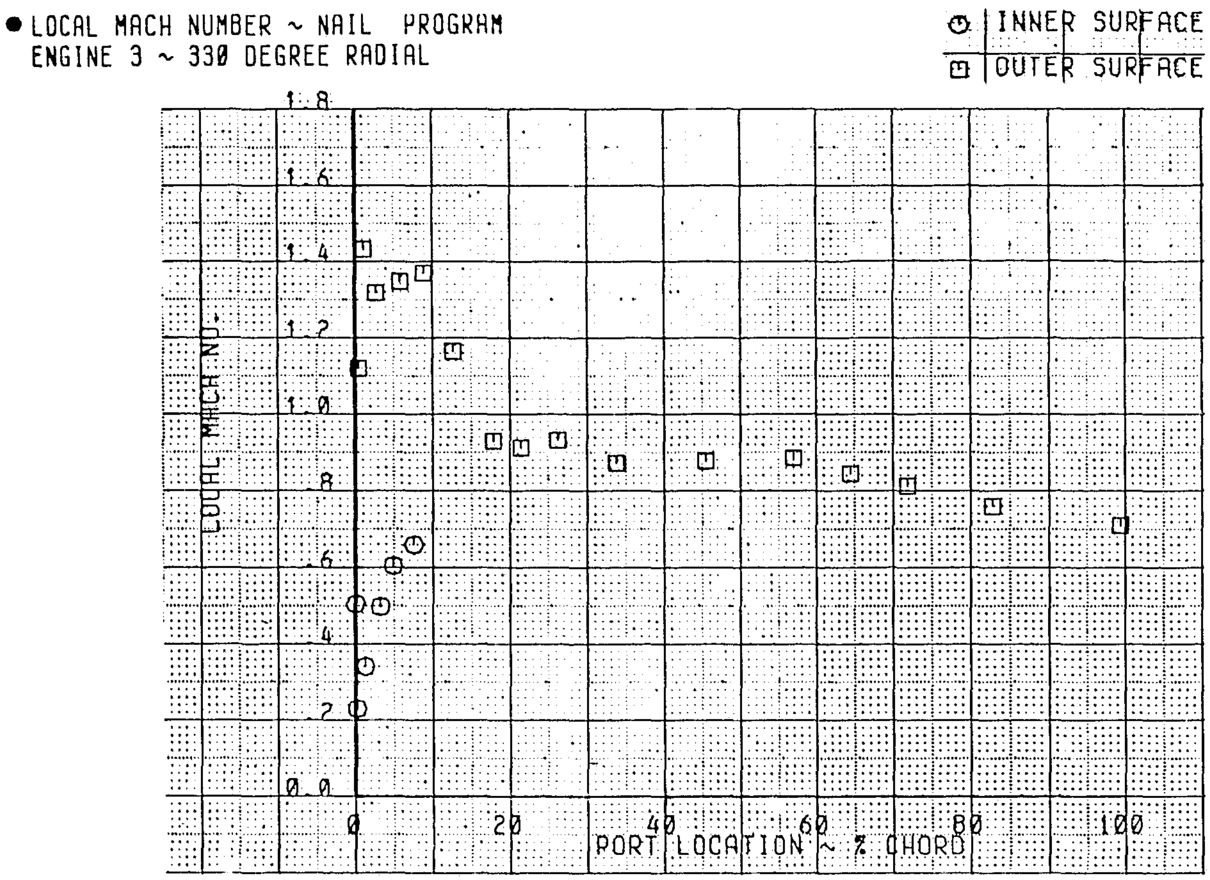
● ENGINE 3 ~ 270 DEGREE RADIAL ~ NAIL



Hp	= 12 478m (40 938 ft)	M	= 0.767
GW	= 199 759 kg (440 393 lbm)	α	= 3.3 deg
Q	= 7.384 kPa (1.071 PSI)	FLAPS = 0 deg	
V_c	= 418.7 km/h (226.1 KTS)	LANDING GEAR UP	

125209-326

Figure B-12. Local Mach Number Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

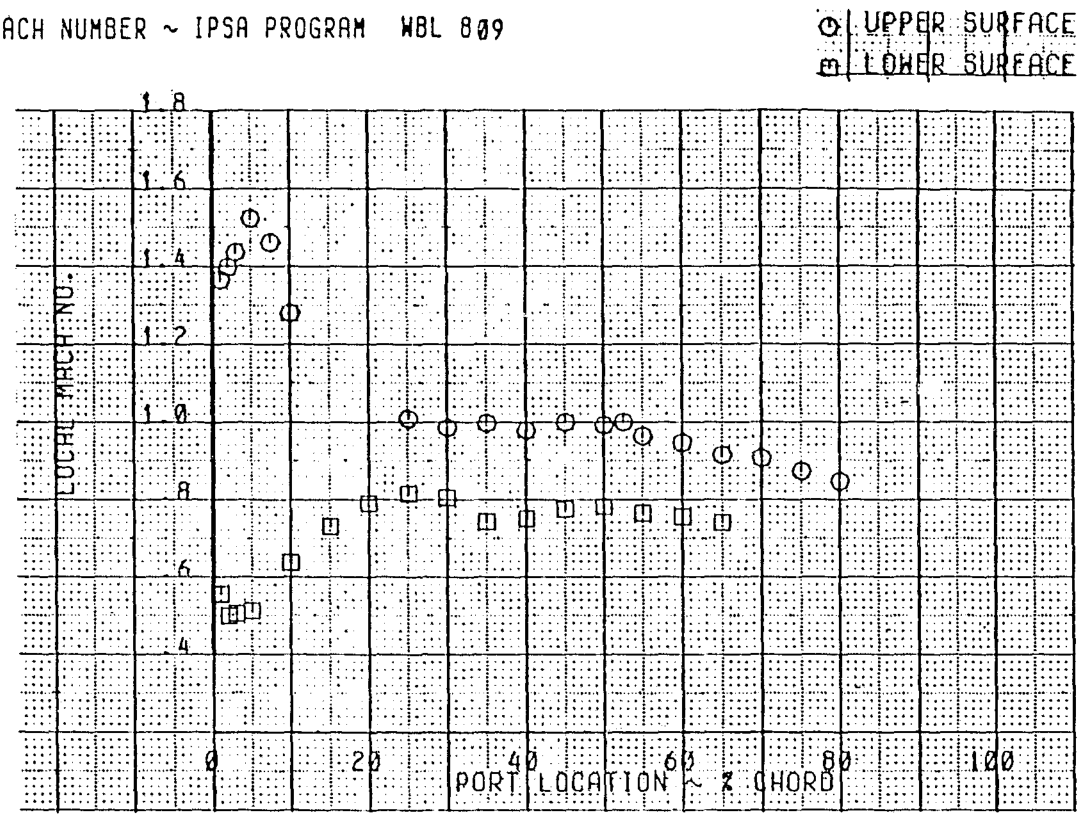


Hp	=	12 478m (40 938 ft)	M	=	0.767
GW	=	199 759 kg (440 393 lbm)	α	=	3.3 deg
Q	=	7.384 kPa (1.071 PSI)	FLAPS = 0 deg		
V_c	=	418.7 km/h (226.1 KTS)	LANDING GEAR UP		

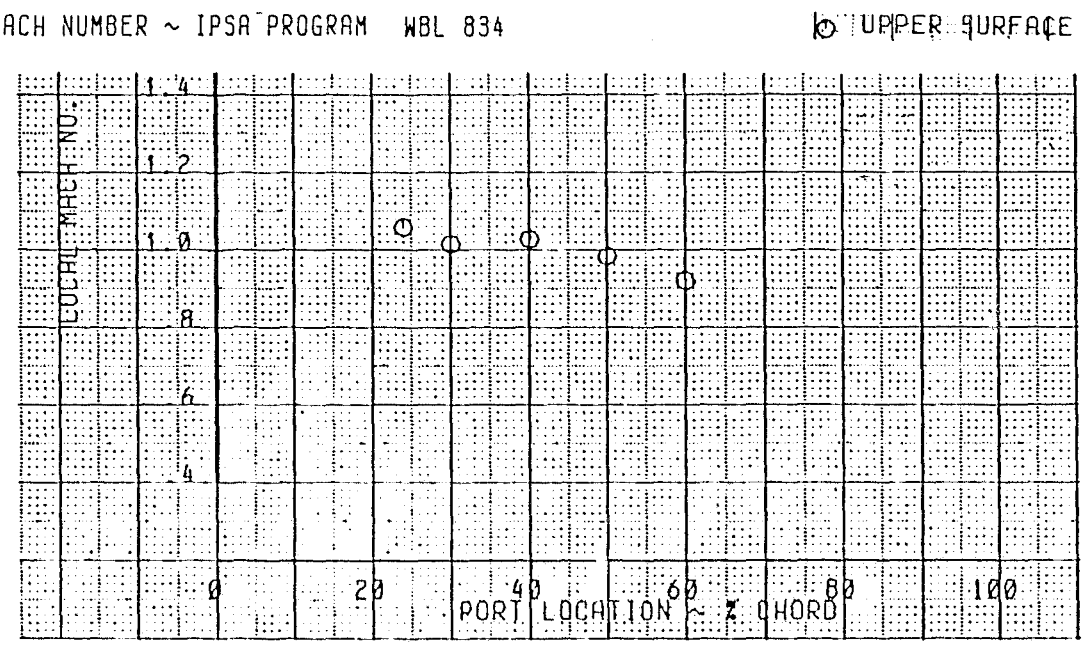
125209-327

Figure B-12. Local Mach Number Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

● LOCAL MACH NUMBER ~ IPSA PROGRAM WBL 809



● LOCAL MACH NUMBER ~ IPSA PROGRAM WBL 834

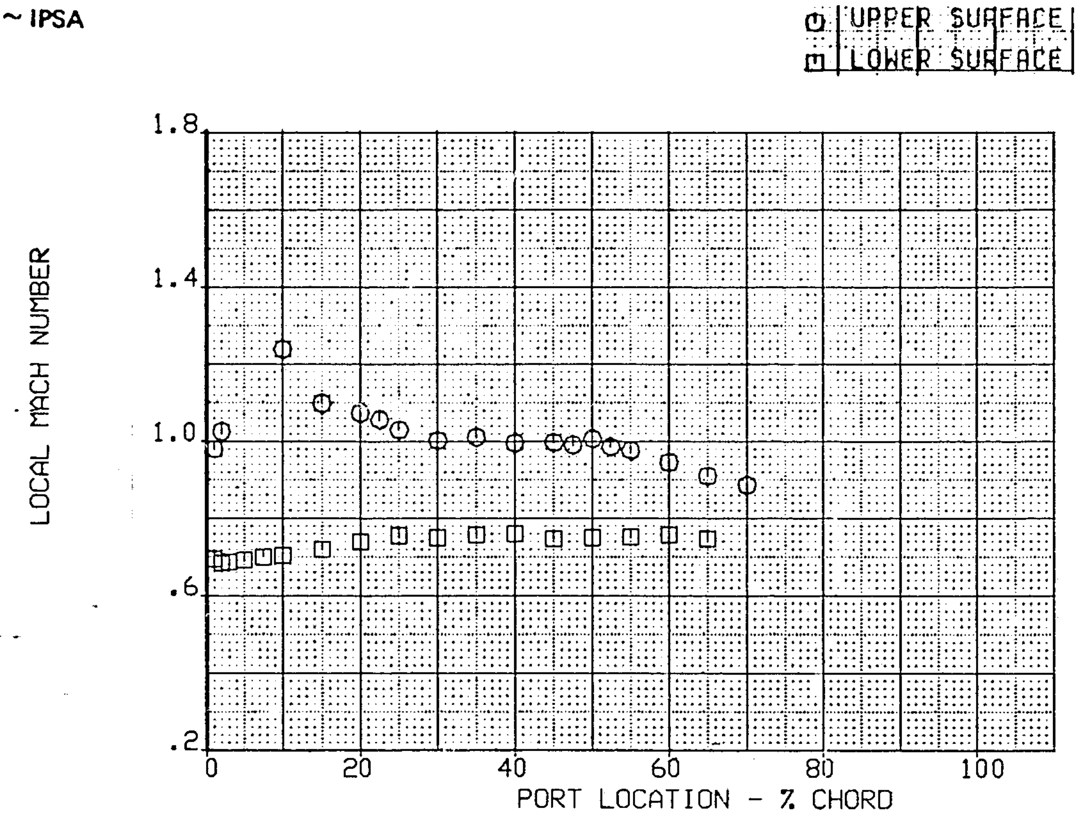


H_P	=	12 478m (40 938 ft)	M	=	0.767
GW	=	199 759 kg (440 393 lbm)	α	=	3.3 deg
Q	=	7.384 kPa (1.071 PSI)	FLAPS = 0 deg		
V_c	=	418.7 km/h (226.1 KTS)	LANDING GEAR UP		

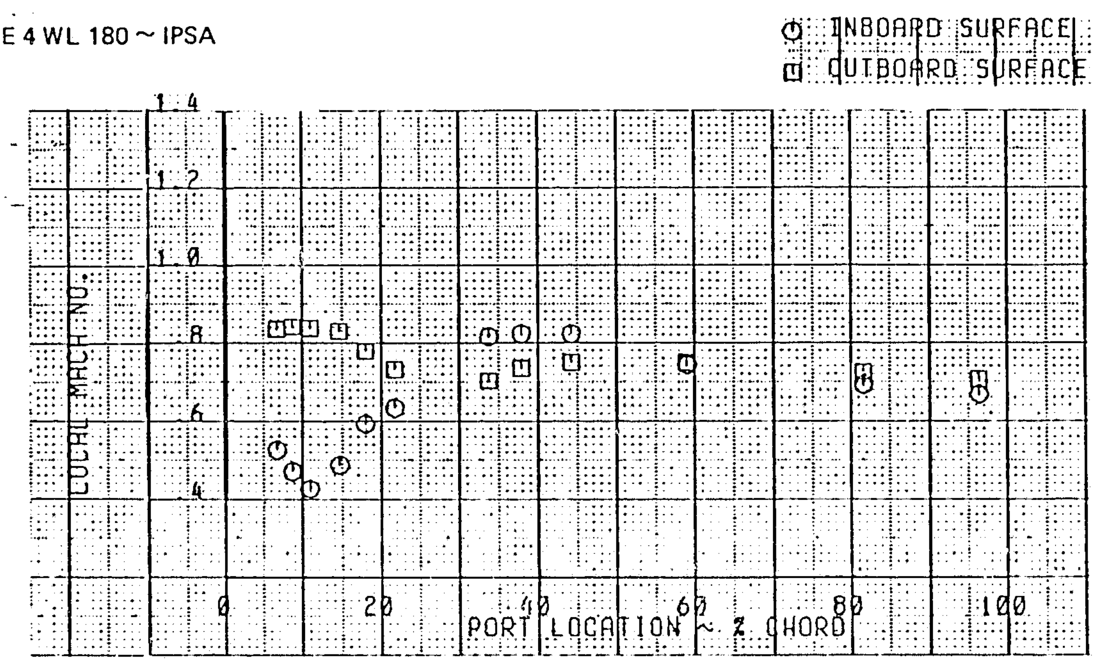
125209-328

Figure B-12. Local Mach Number Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

• WBL 870 ~ IPSA



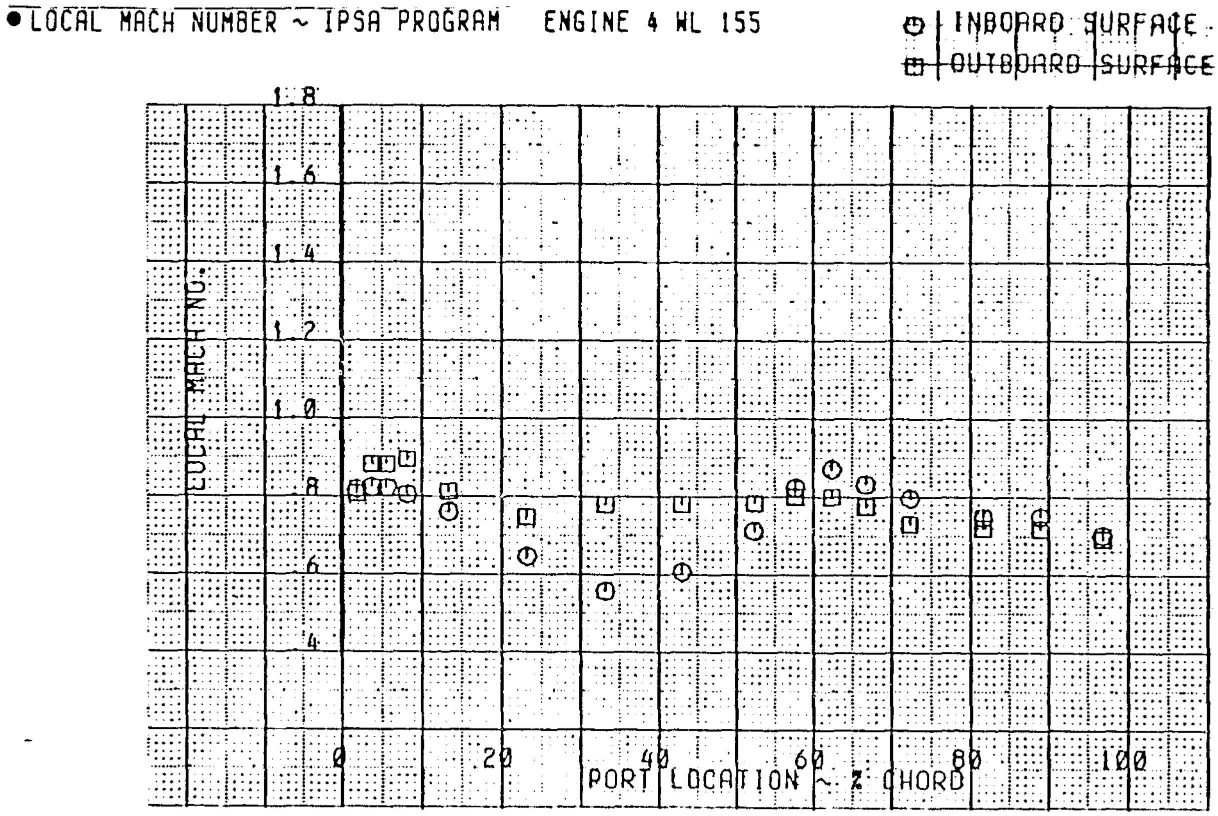
ENGINE 4 WL 180 ~ IPSA

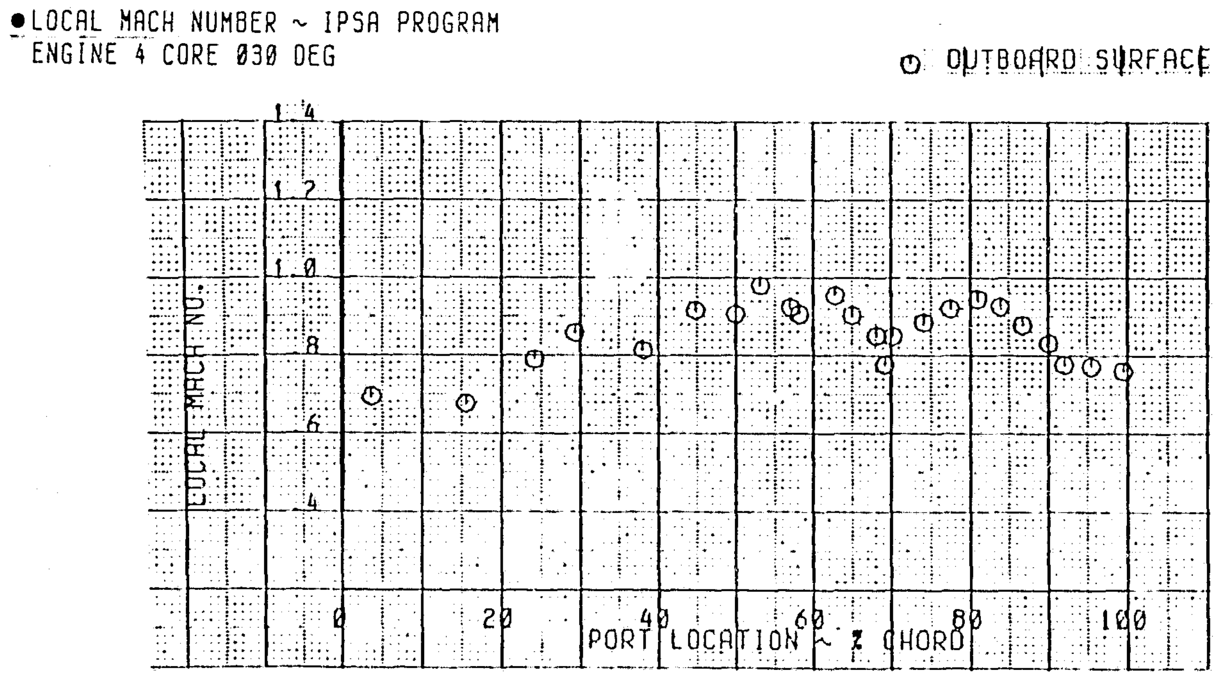


Hp	=	12 478m (40 938 ft)	M	= 0.767
GW	=	199 759 kg (440 393 lbm)	α	= 3.3 deg
Q	=	7.384 kPa (1.071 PSI)	FLAPS = 0 deg	
V_c	=	418.7 km/h (226.1 KTS)	LANDING GEAR UP	

125209-329

Figure B-12. Local Mach Number Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

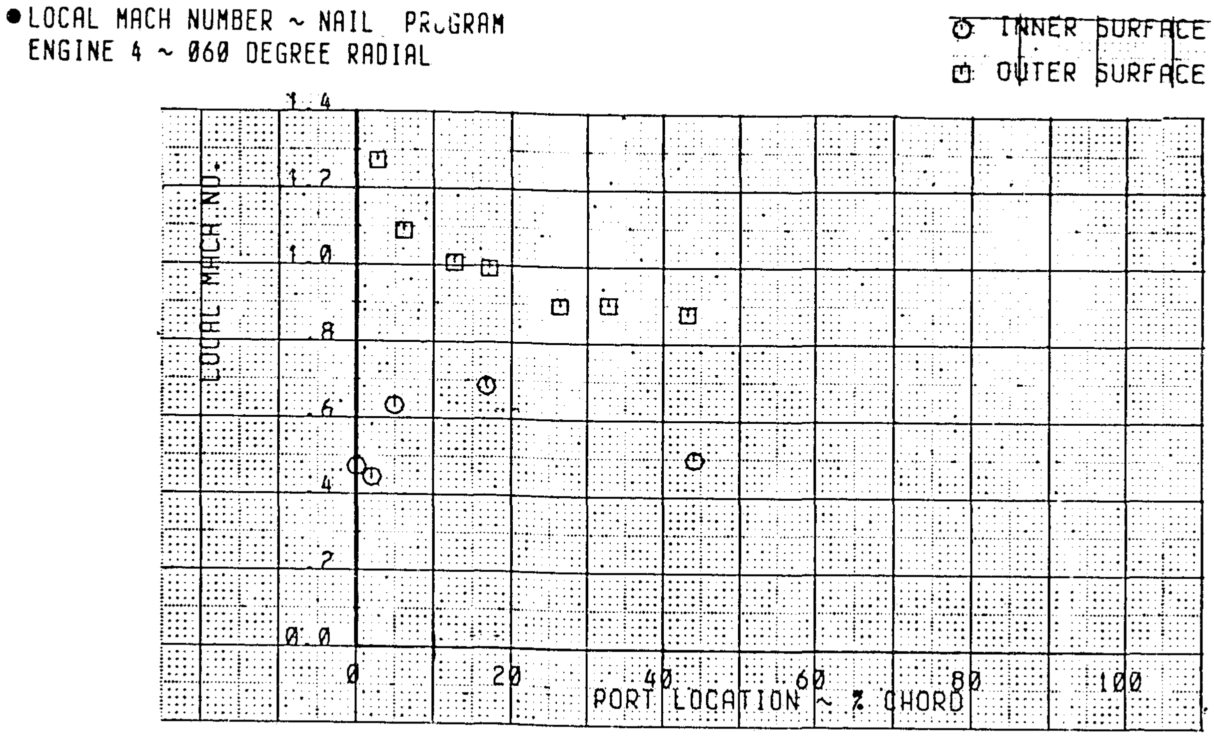


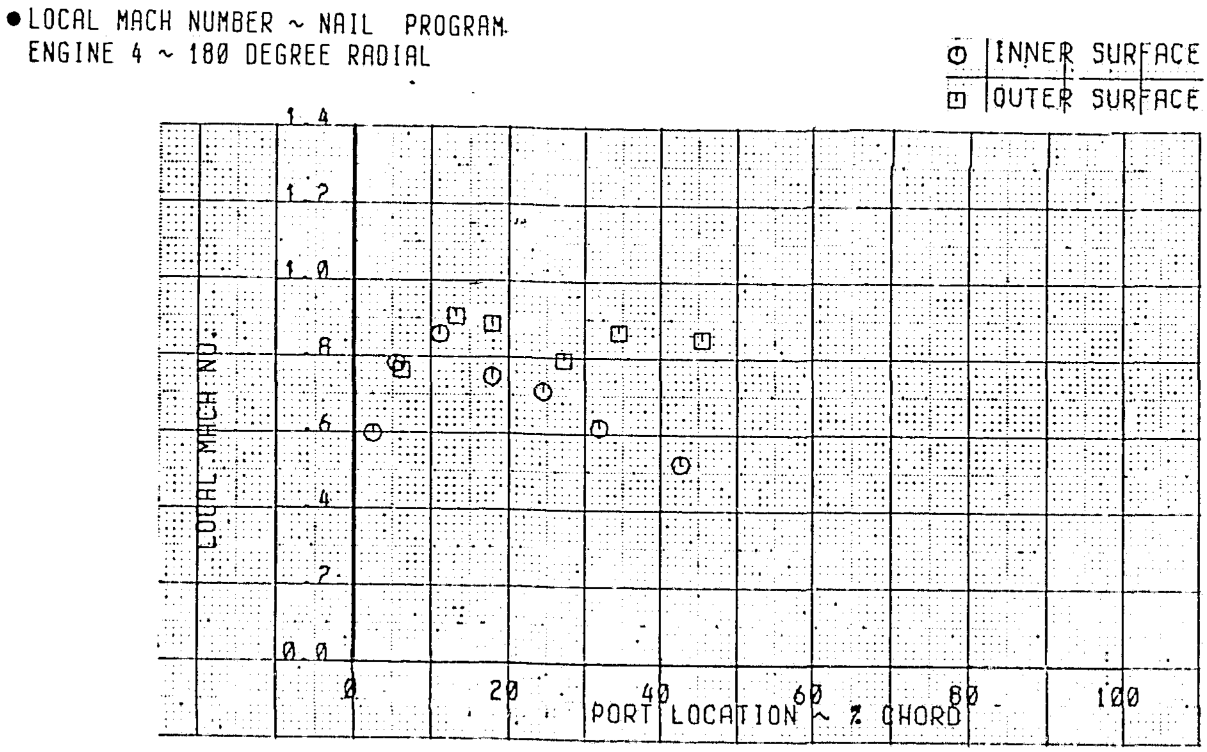


Hp	=	12 478m (40 938 ft)	M	=	0.767
GW	=	199 759 kg (440 393 lbm)	α	=	3.3 deg
Q	=	7.384 kPa (1.071 PSI)	FLAPS = 0 deg		
V_c	=	418.7 km/h (226.1 KTS)	LANDING GEAR UP		

125209-330

Figure B-12. Local Mach Number Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

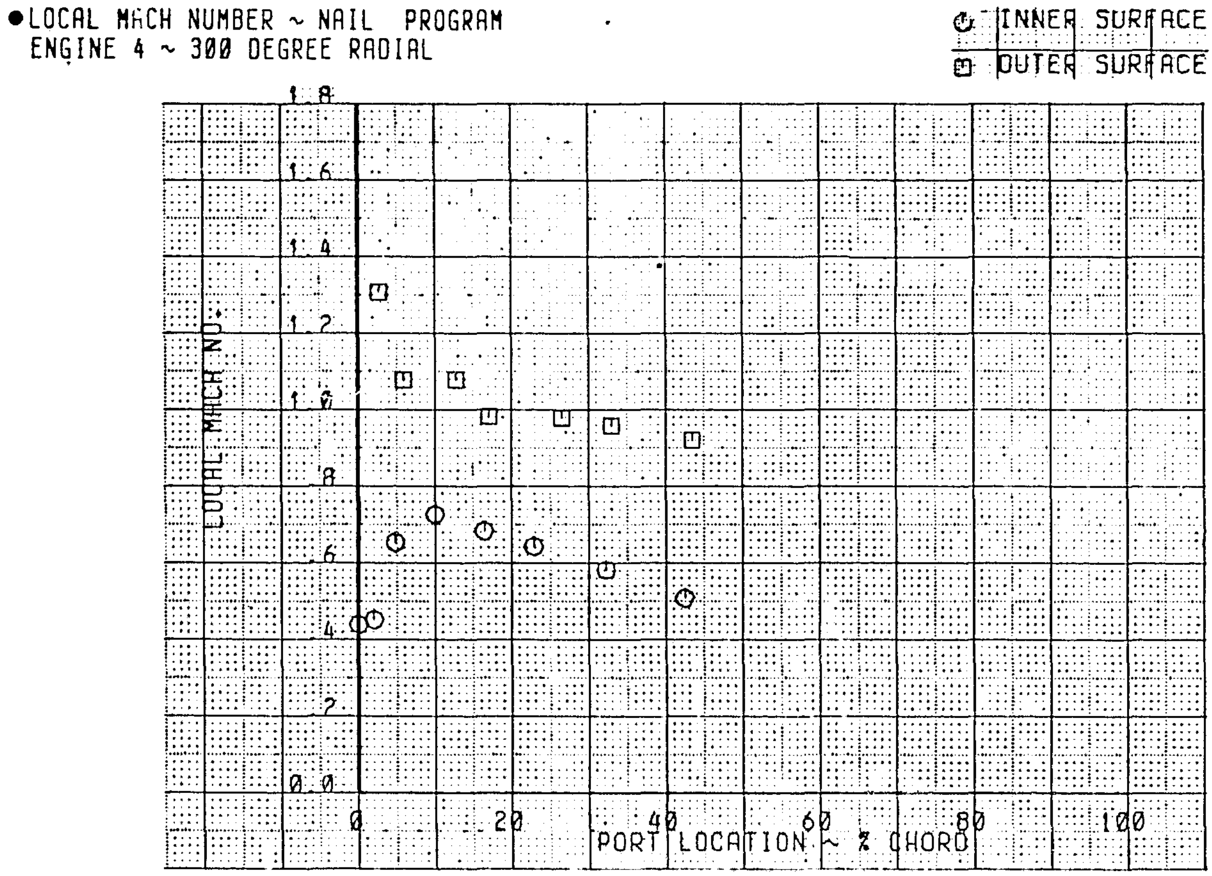




Hp	=	12 478m (40 938 ft)	M	=	0.767
GW	=	199 759 kg (440 393 lbm)	α	=	3.3 deg
Q	=	7.384 kPa (1.071 PSI)	FLAPS = 0 deg		
V_c	=	418.7 km/h (226.1 KTS)	LANDING GEAR UP		

125209-331

Figure B-12. Local Mach Number Plots (Test 273-09, Condition 1.00.137.002.1)(Continued)

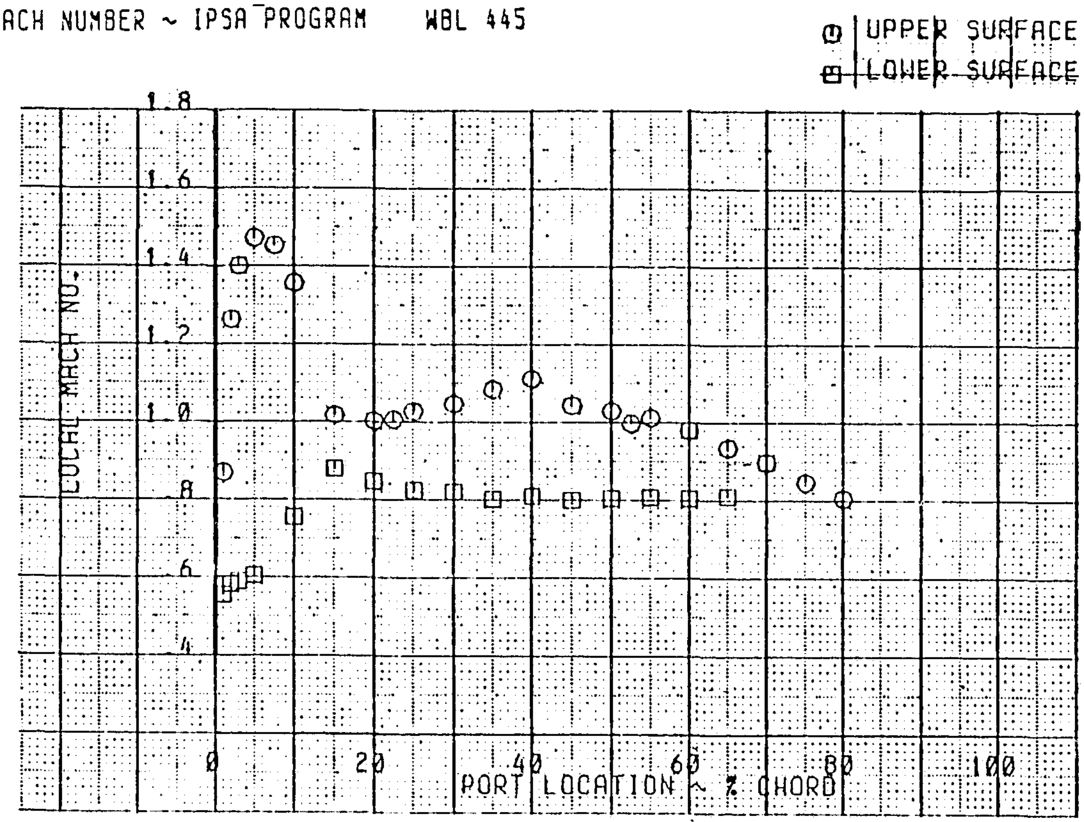


Hp	= 12 478m (40 938 ft)	M	= 0.767
GW	= 199 759 kg (440 393 lbm)	α	= 3.3 deg
Q	= 7.384 kPa (1.071 PSI)	FLAPS = 0 deg	
V_c	= 418.7 km/h (226.1 KTS)	LANDING GEAR UP	

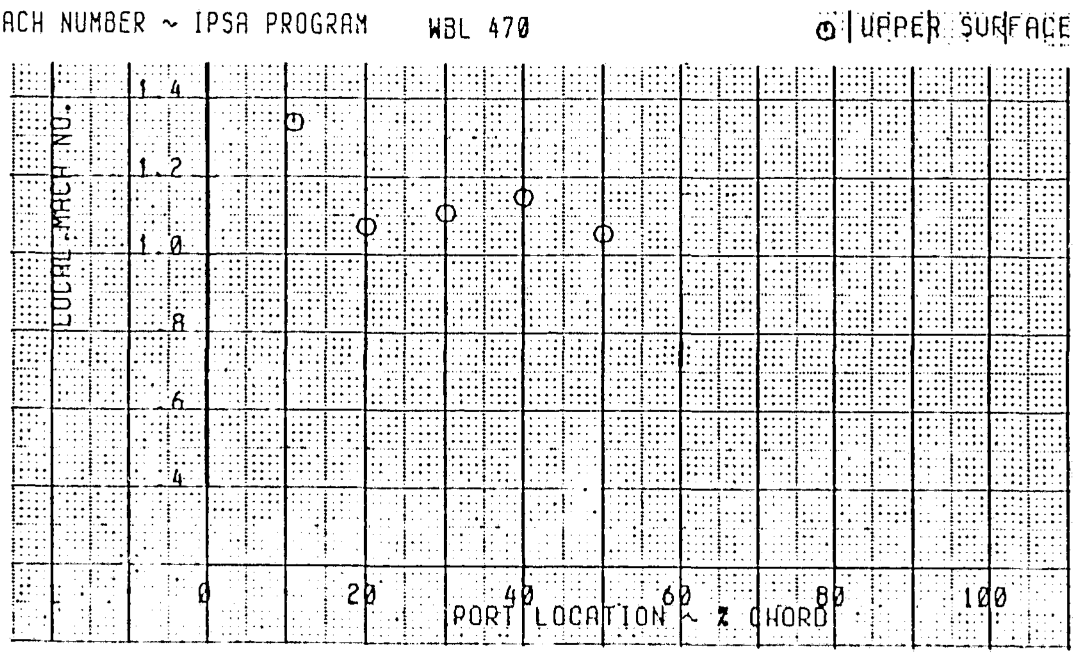
125209-332

Figure B-12. Local Mach Number Plots (Test 273-09, Condition 1.00.137.002.1) (Concluded)

● LOCAL MACH NUMBER ~ IPSA PROGRAM WBL 445



● LOCAL MACH NUMBER ~ IPSA PROGRAM WBL 470

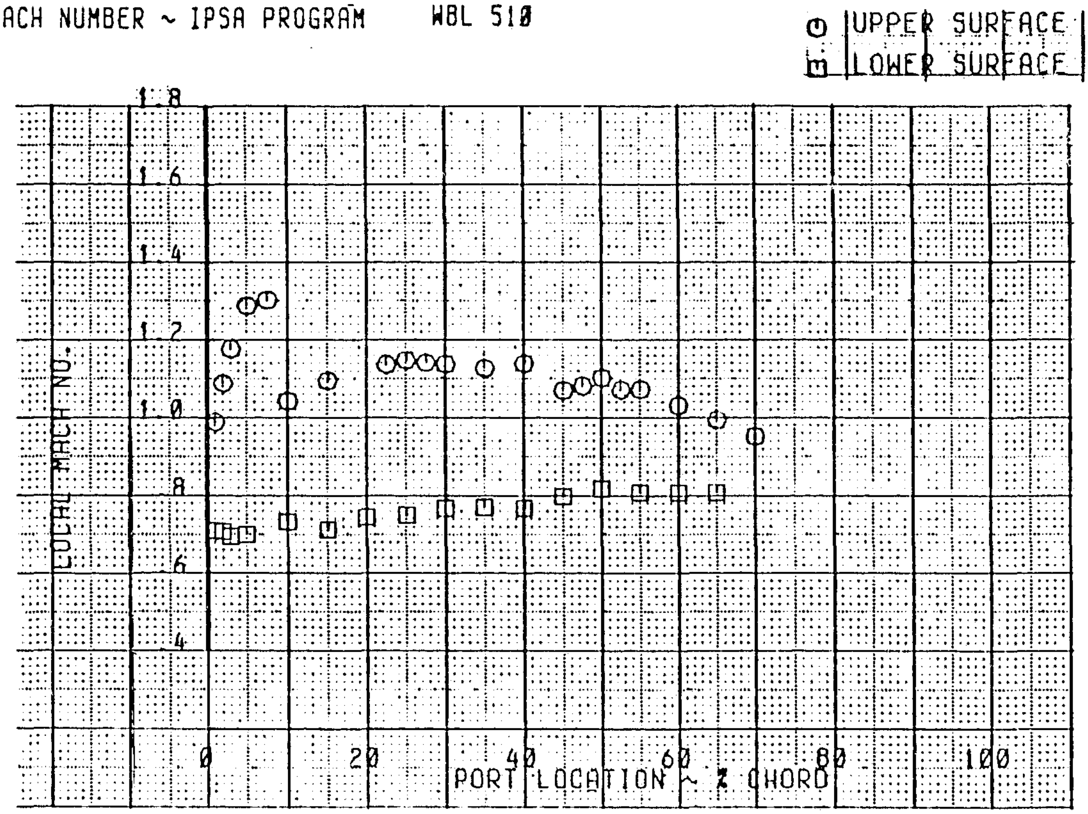


Hp	=	12 353m (40 528 ft)	M	=	0.798
GW	=	204 452 kg (450 740 lbm)	α	=	2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS = 0 deg		
V_c	=	441.2 km/h (238.7 KTS)	LANDING GEAR UP		

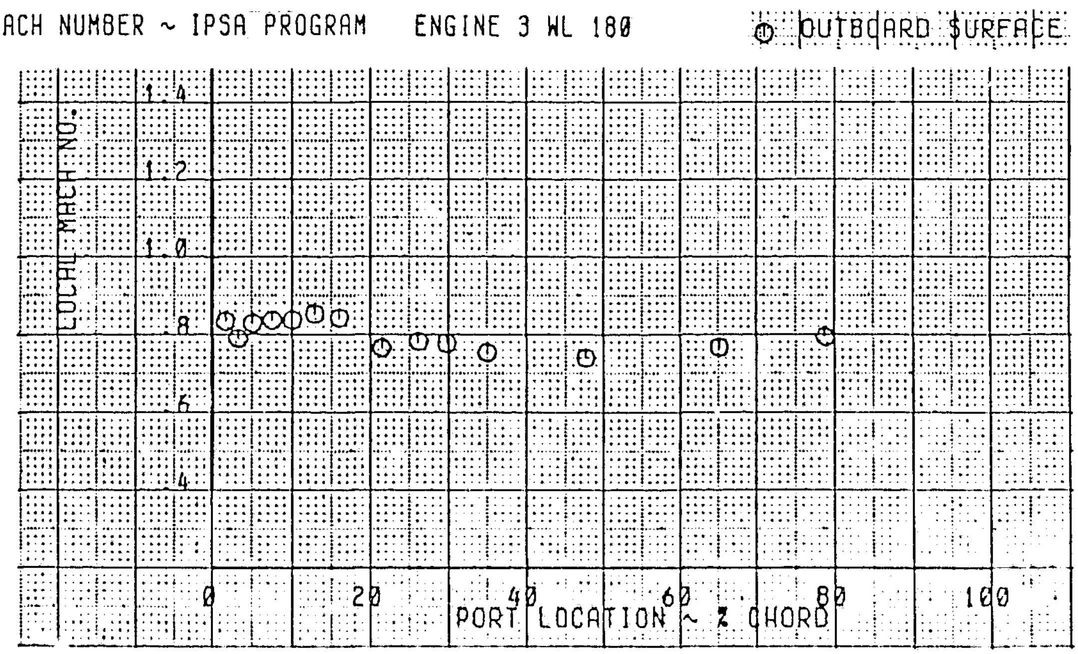
125209-333

Figure B-13. Local Mach Number Plots (Test 273-09, Condition 1.00.137.003)

● LOCAL MACH NUMBER ~ IPSA PROGRAM WBL 510



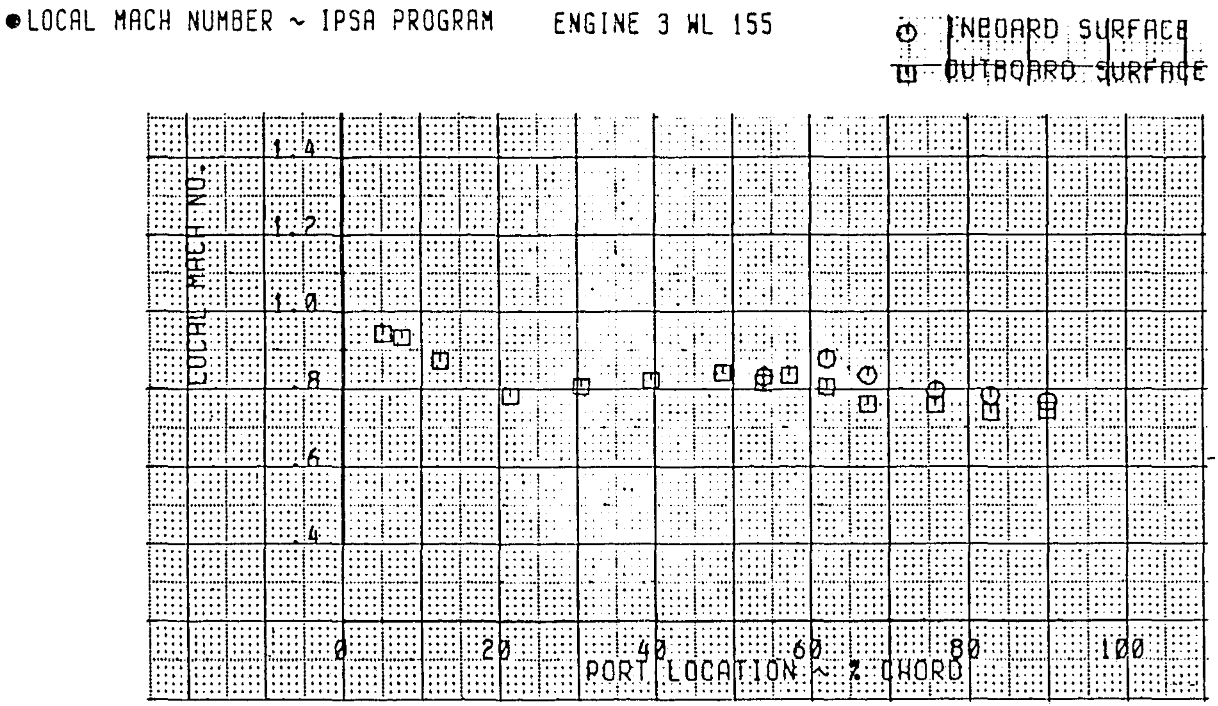
● LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 3 WL 180

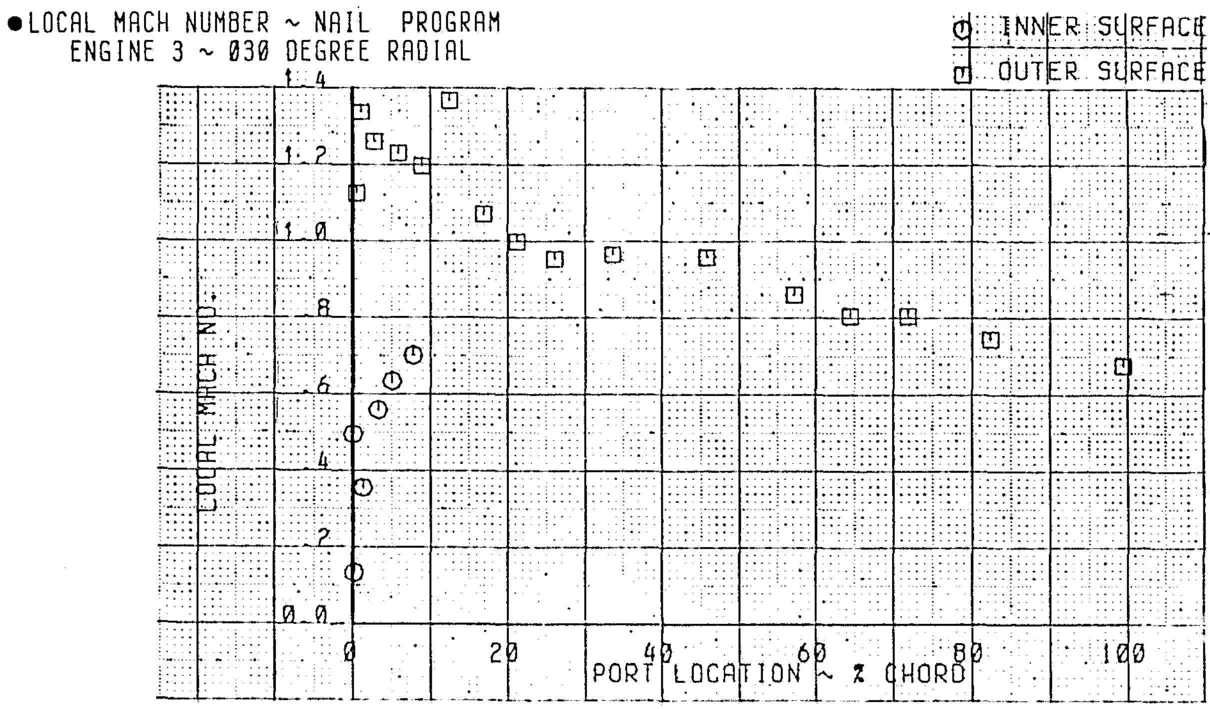


Hp	=	12 353m (40 528 ft)	M	=	0.798
GW	=	204 452 kg (450 740 lbm)	α	=	2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS = 0 deg		
V_c	=	441.2 km/h (238.7 KTS)	LANDING GEAR UP		

125209-334

Figure B-13. Local Mach Number Plots (Test 273-09, Condition 1.00.137.003)(Continued)

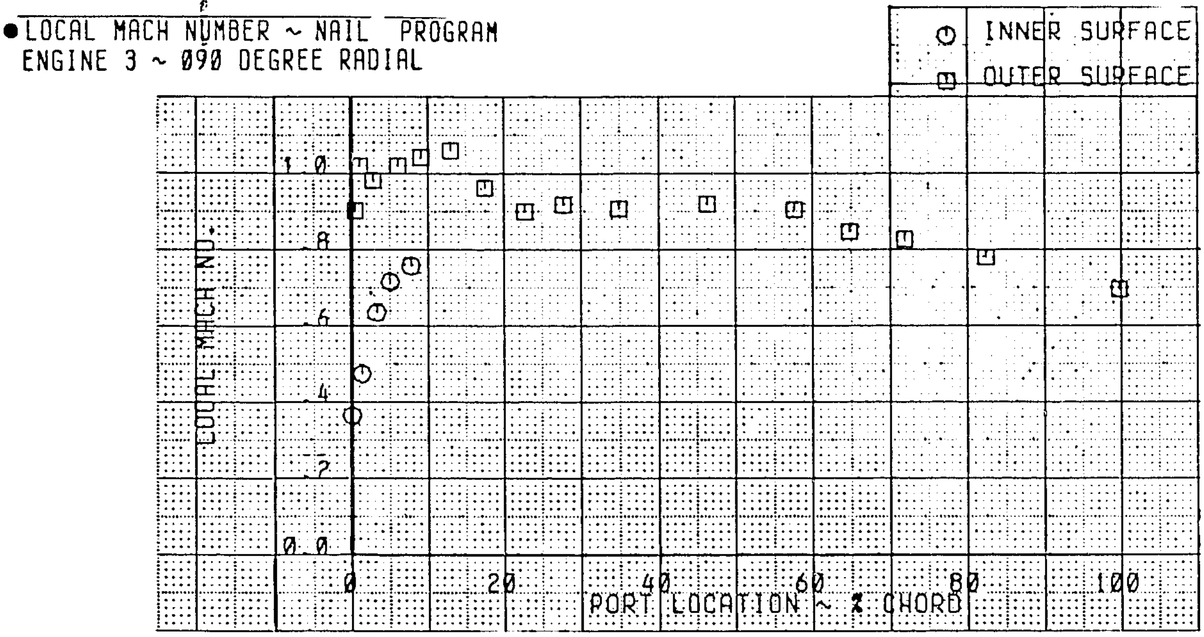


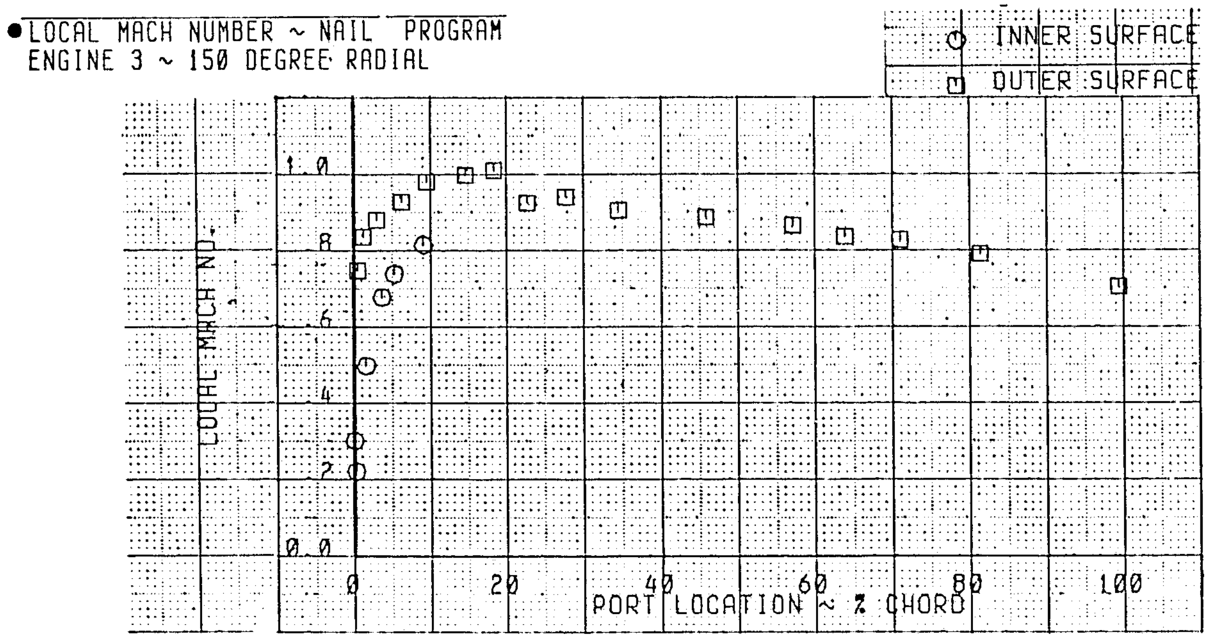


Hp	= 12 353m (40 528 ft)	M	= 0.798
GW	= 204 452 kg (450 740 lbm)	α	= 2.8 deg
Q	= 8.156 kPa (1.183 PSI)	FLAPS	= 0 deg
V_c	= 441.2 km/h (238.7 KTS)	LANDING GEAR UP	

125209-335

Figure B-13. Local Mach Number Plots (Test 273-09, Condition 1.00.137.003)(Continued)



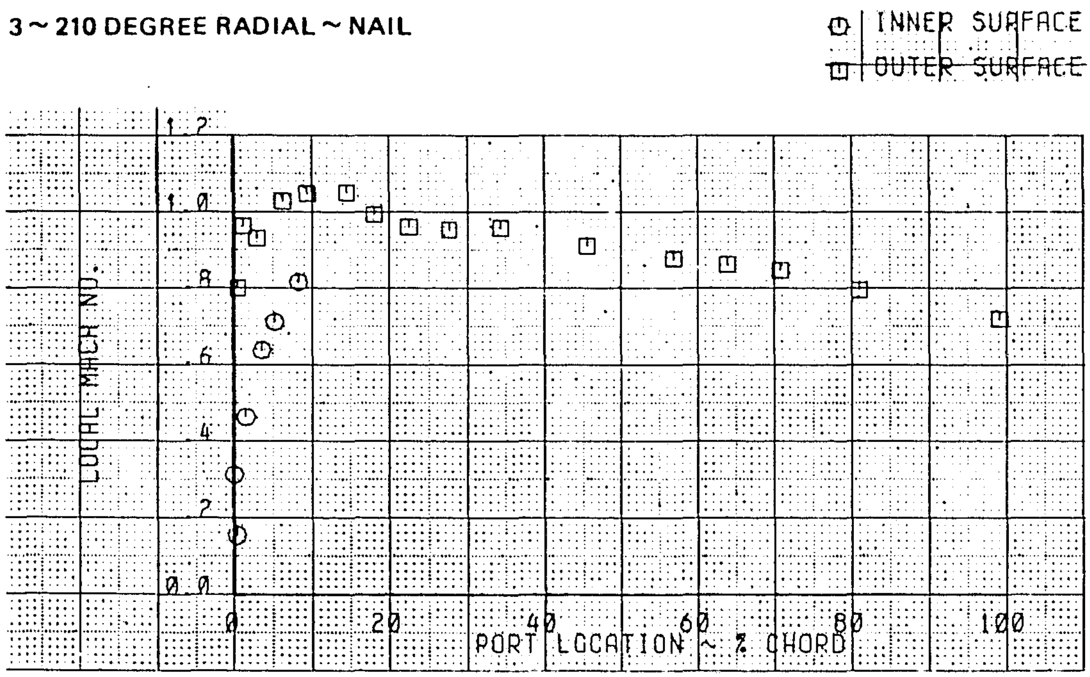


Hp	=	12 353m (40 528 ft)	M	=	0.798
GW	=	204 452 kg (450 740 lbm)	α	=	2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS	=	0 deg
V_c	=	441.2 km/h (238.7 KTS)	LANDING GEAR UP		

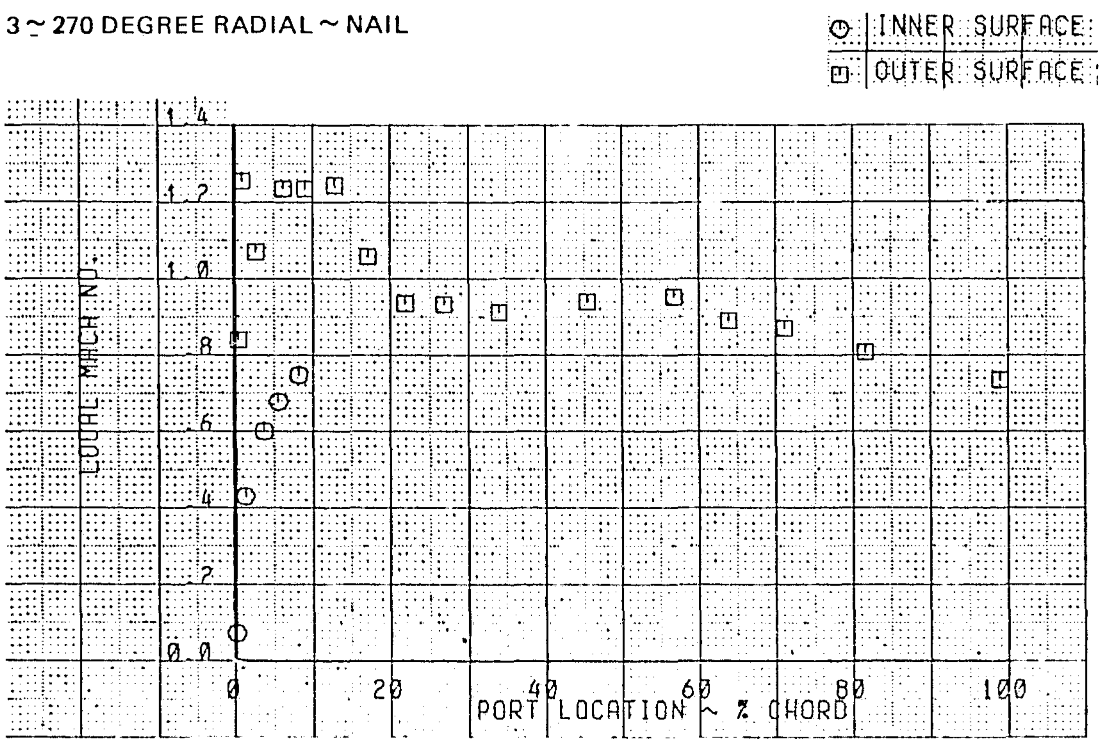
125209-336

Figure B-13. Local Mach Number Plots (Test 273-09, Condition 1.00.137.003)(Continued)

• ENGINE 3 ~ 210 DEGREE RADIAL ~ NAIL



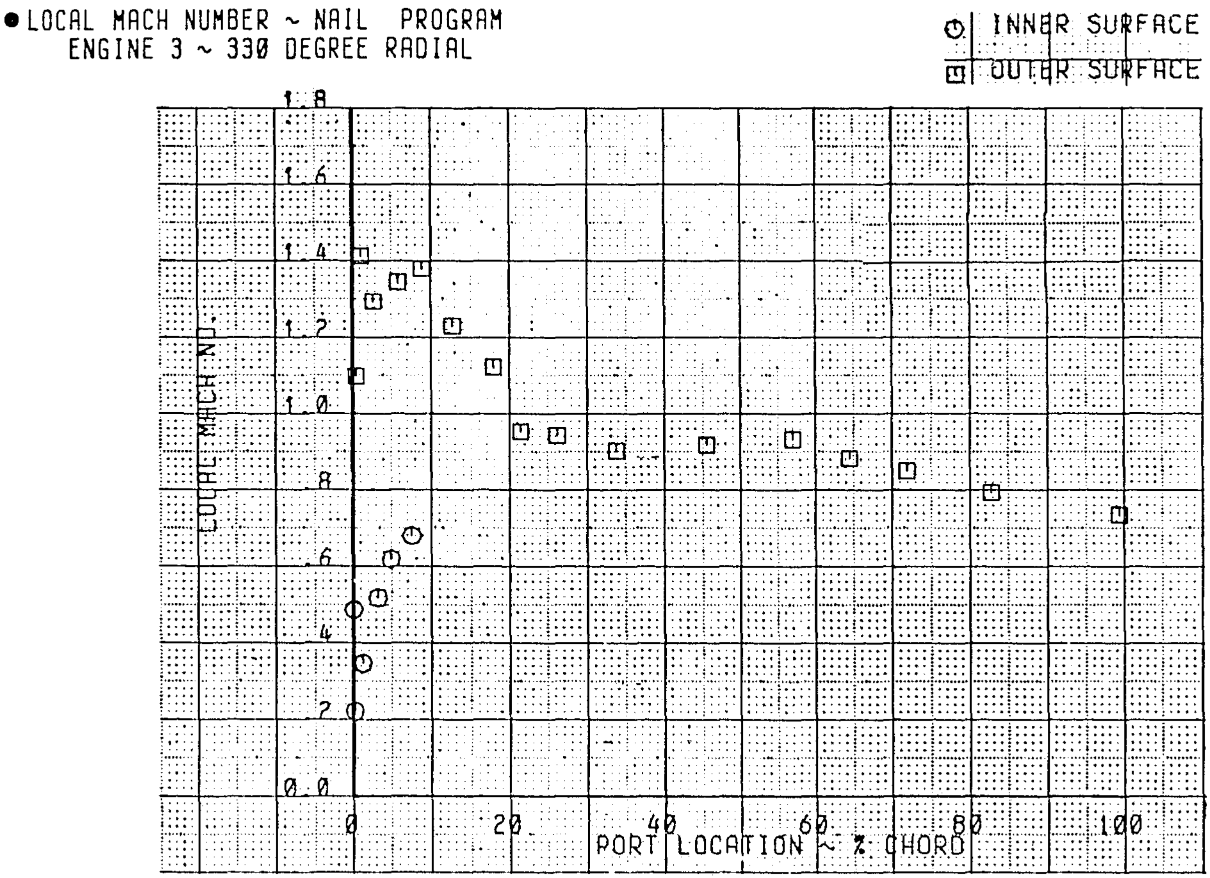
• ENGINE 3 ~ 270 DEGREE RADIAL ~ NAIL



H_p	=	12 353m (40 528 ft)	M	=	0.798
GW	=	204 452 kg (450 740 lbm)	α	=	2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS = 0 deg		
V_c	=	441.2 km/h (238.7 KTS)	LANDING GEAR UP		

125209-337

Figure B-13. Local Mach Number Plots (Test 273-09, Condition 1.00.137.003)(Continued)

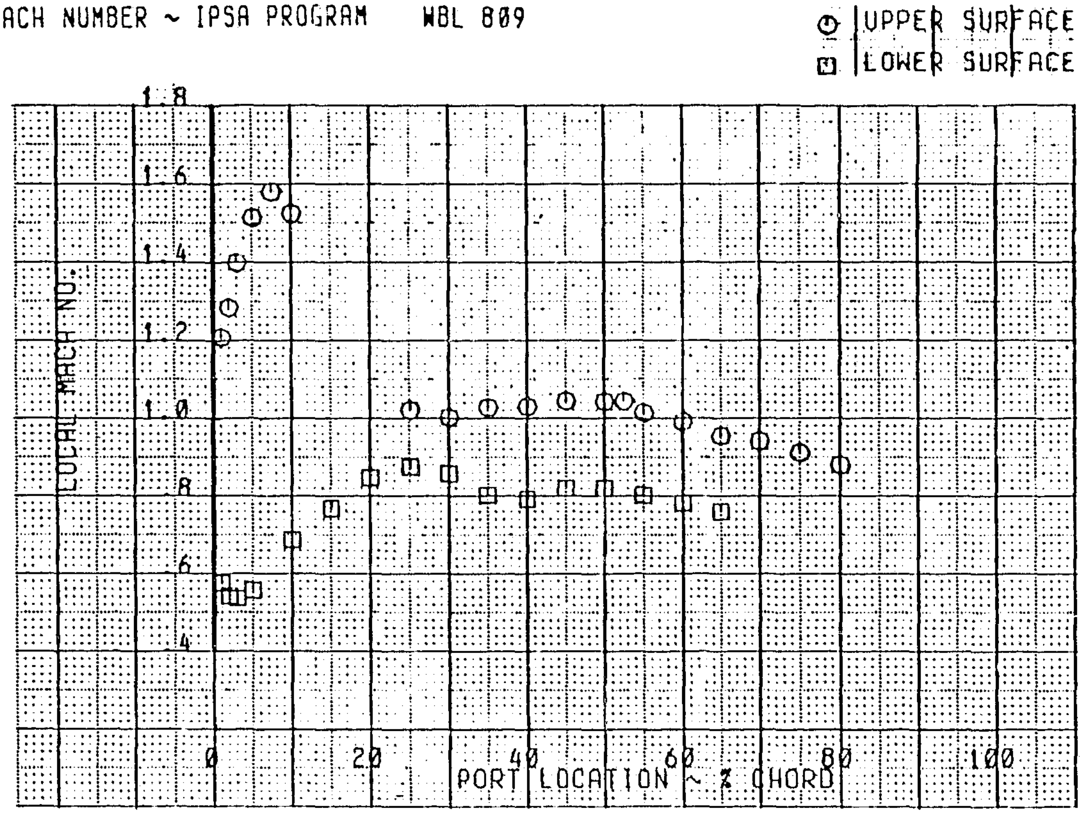


H_P	=	12 353m (40 528 ft)	M	= 0.798
GW	=	204 452 kg (450 740 lbm)	α	= 2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS = 0 deg	
V_c	=	441.2 km/h (238.7 KTS)	LANDING GEAR UP	

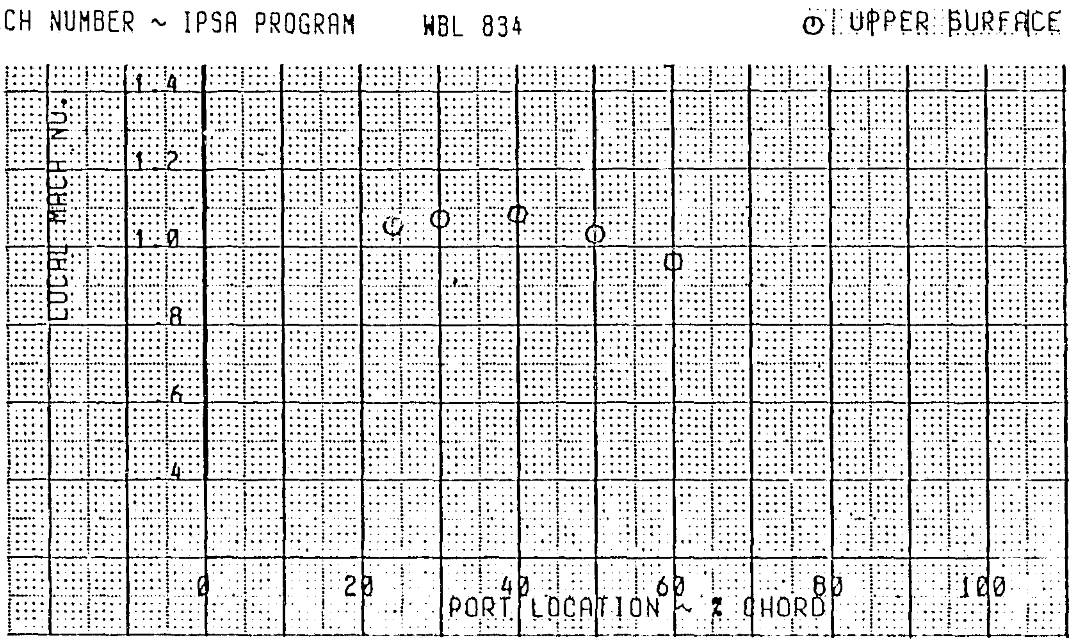
125209-338

Figure B-13. Local Mach Number Plots (Test 273-09, Condition 1.00.137.003)(Continued)

● LOCAL MACH NUMBER ~ IPSA PROGRAM WBL 809



● LOCAL MACH NUMBER ~ IPSA PROGRAM WBL 834

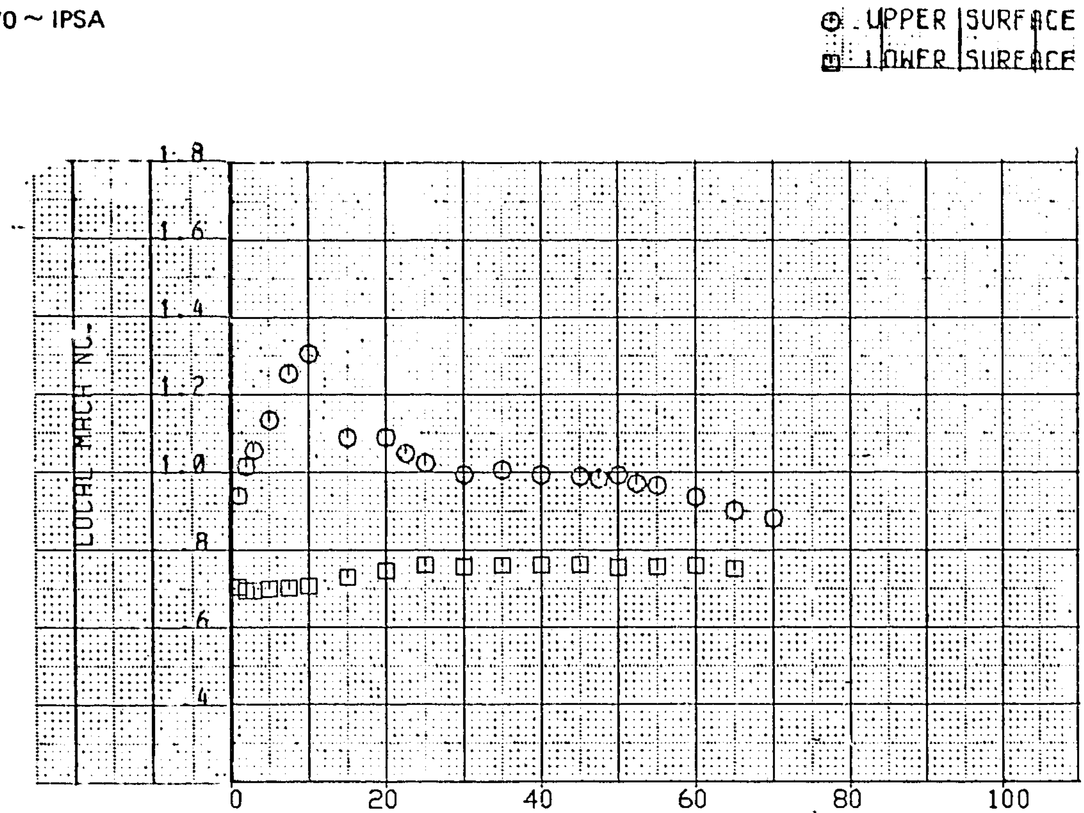


Hp	=	12 353m (40 528 ft)	M	=	0.798
GW	=	204 452 kg (450 740 lbm)	α	=	2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS = 0 deg		
V_c	=	441.2 km/h (238.7 KTS)	LANDING GEAR UP		

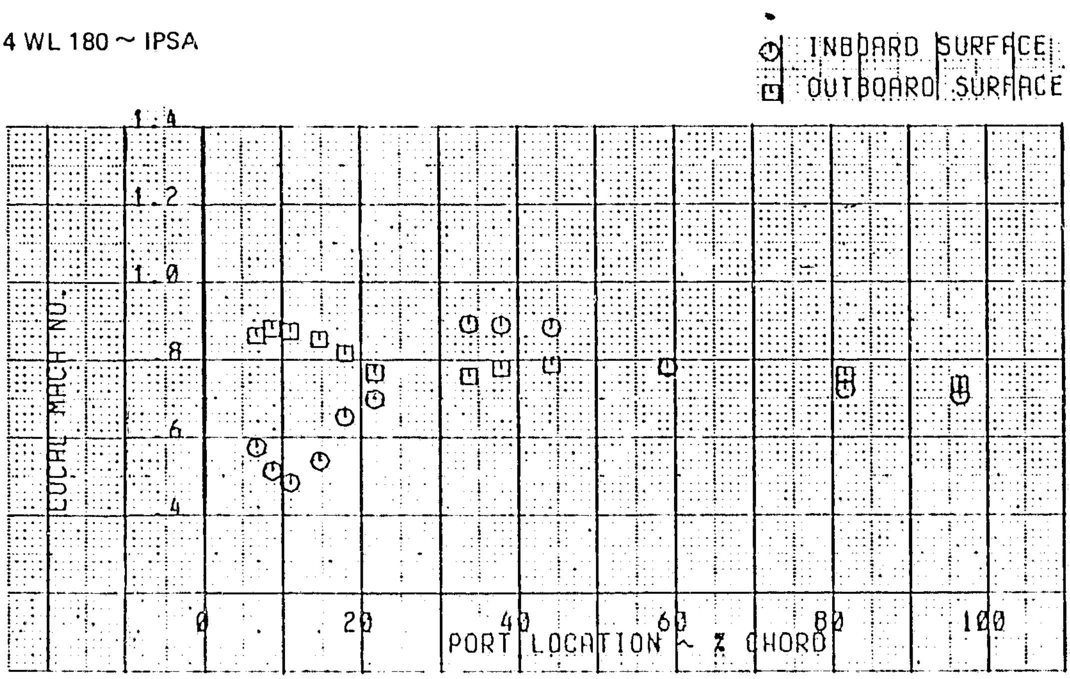
125209-339

Figure B-13. Local Mach Number Plots (Test 273-09, Condition 1.00.137.003)(Continued)

• WBL 870 ~ IPSA



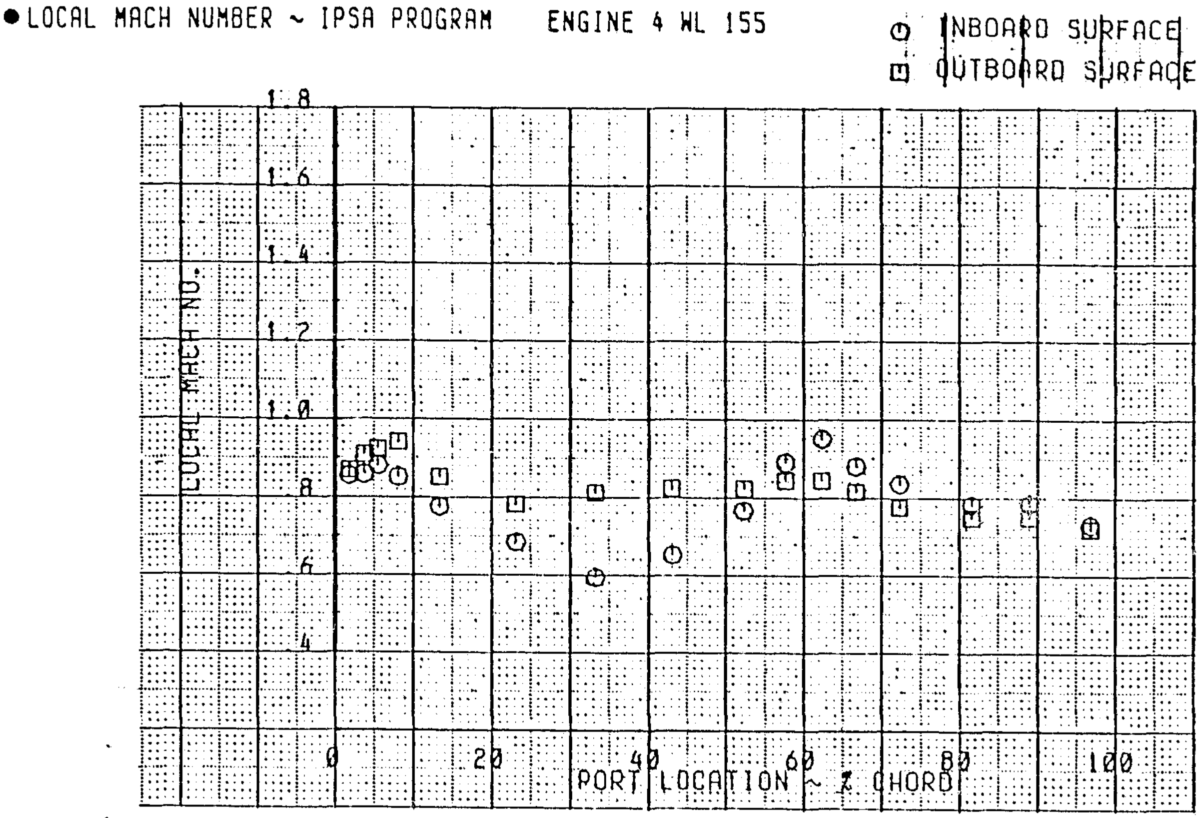
• ENGINE 4 WL 180 ~ IPSA

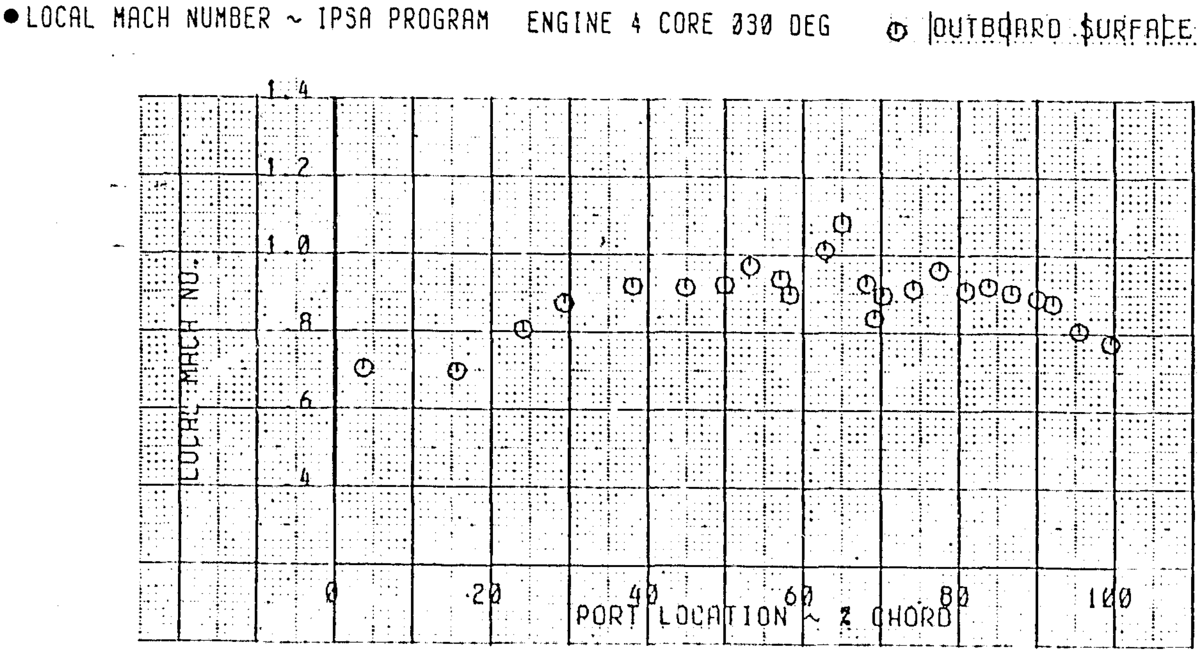


Hp	=	12 353m (40 528 ft)	M	=	0.798
GW	=	204 452 kg (450 740 lbm)	α	=	2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS	=	0 deg
V_c	=	441.2 km/h (238.7 KTS)	LANDING GEAR UP		

125209-340

Figure B-13. Local Mach Number Plots (Test 273-09, Condition 1.00.137.003)(Continued)



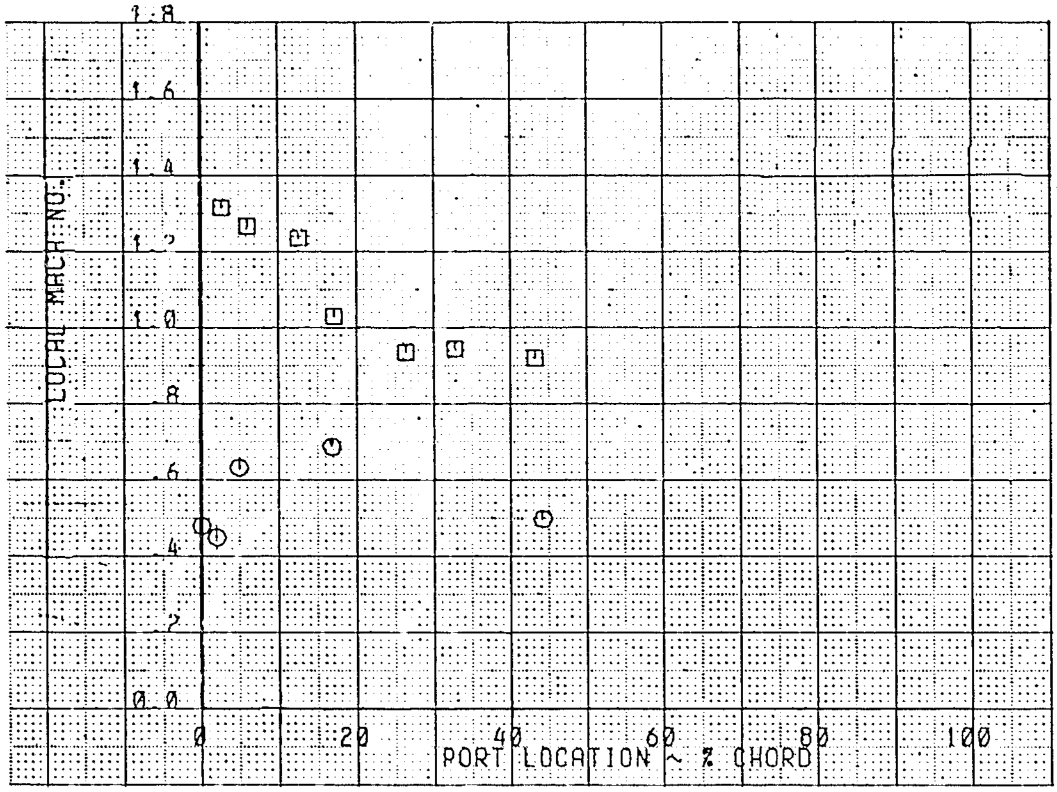


Hp	= 12 353m (40 528 ft)	M	= 0.798
GW	= 204 452 kg (450 740 lbm)	α	= 2.8 deg
Q	= 8.156 kPa (1.183 PSI)	FLAPS	= 0 deg
V_c	= 441.2 km/h (238.7 KTS)	LANDING GEAR UP	

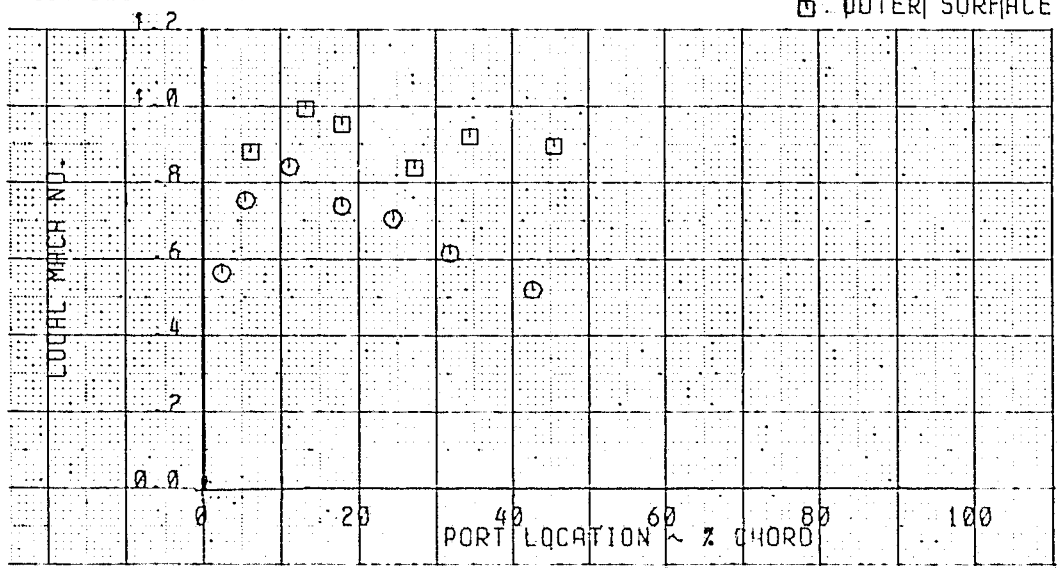
125209-341

Figure B-13. Local Mach Number Plots (Test 273-09, Condition 1.00.137.003)(Continued)

• LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 4 ~ 060 DEGREE RADIAL



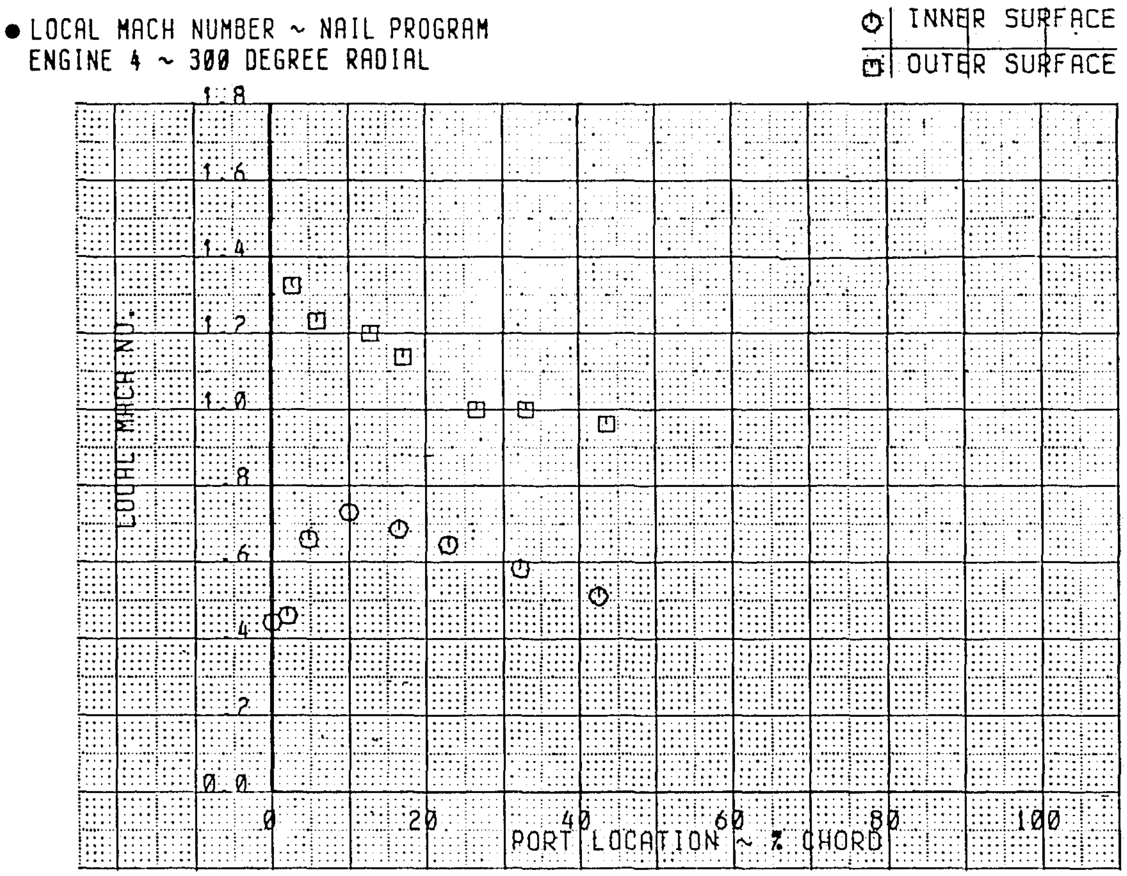
• LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 4 ~ 180 DEGREE RADIAL



Hp	=	12 353m (40 528 ft)	M	=	0.798
GW	=	204 452 kg (450 740 lbm)	α	=	2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS = 0 deg		
V_c	=	441.2 km/h (238.7 KTS)	LANDING GEAR UP		

125209-342

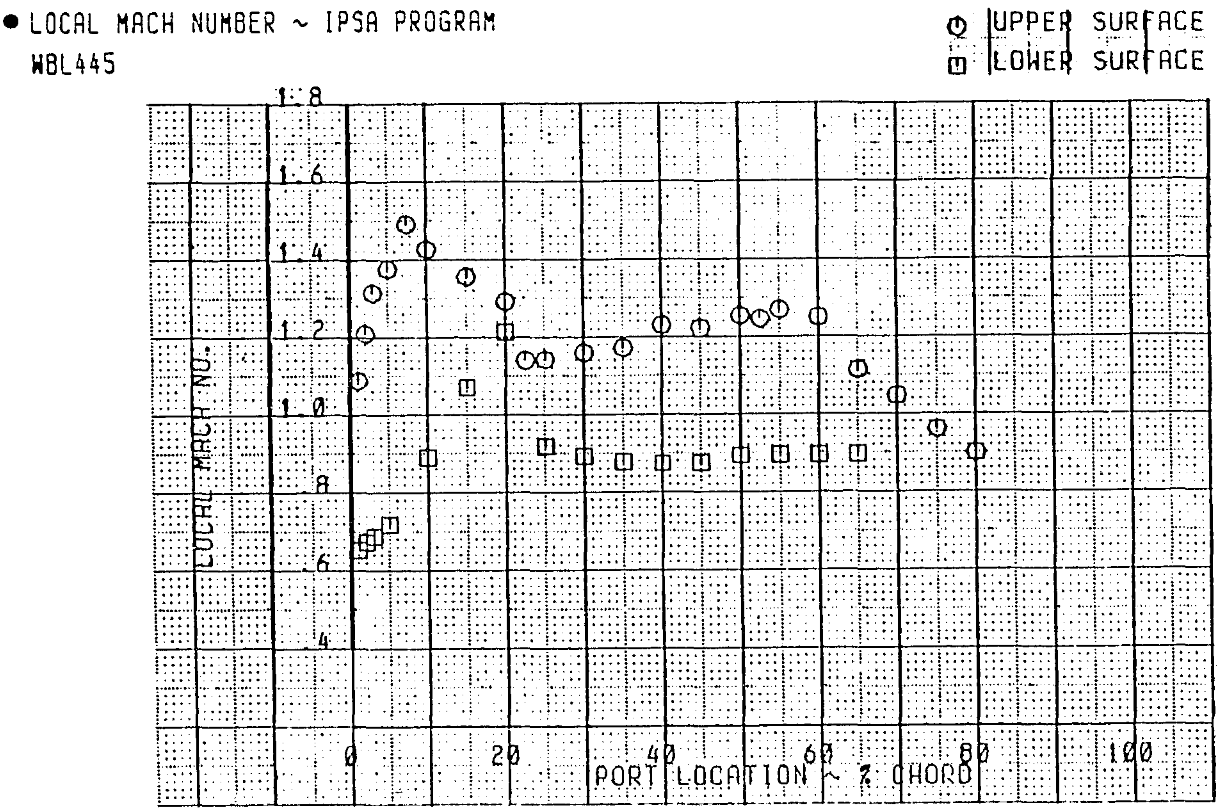
Figure B-13. Local Mach Number Plots (Test 273-09, Condition 1.00.137.003)(Continued)

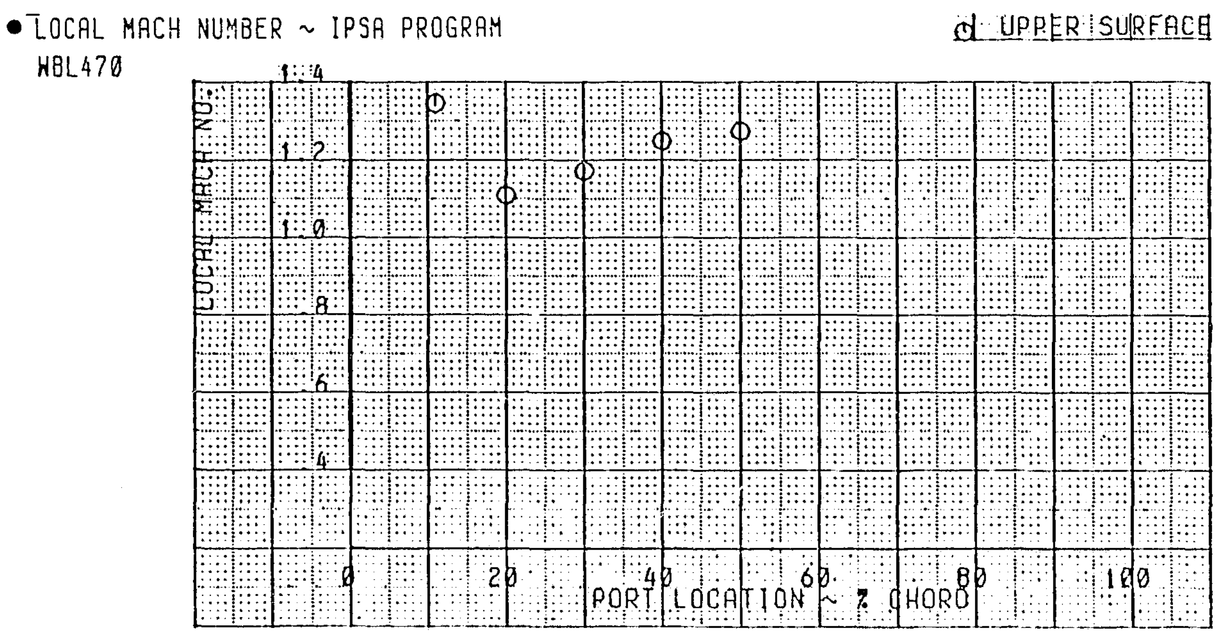


H_P	=	12 353m (40 528 ft)	M	=	0.798
GW	=	204 452 kg (450 740 lbm)	α	=	2.8 deg
Q	=	8.156 kPa (1.183 PSI)	FLAPS	=	0 deg
V_c	=	441.2 km/h (238.7 KTS)	LANDING GEAR UP		

125209-343

Figure B-13. Local Mach Number Plots (Test 273-09, Condition 1.00.137.003) (Concluded)



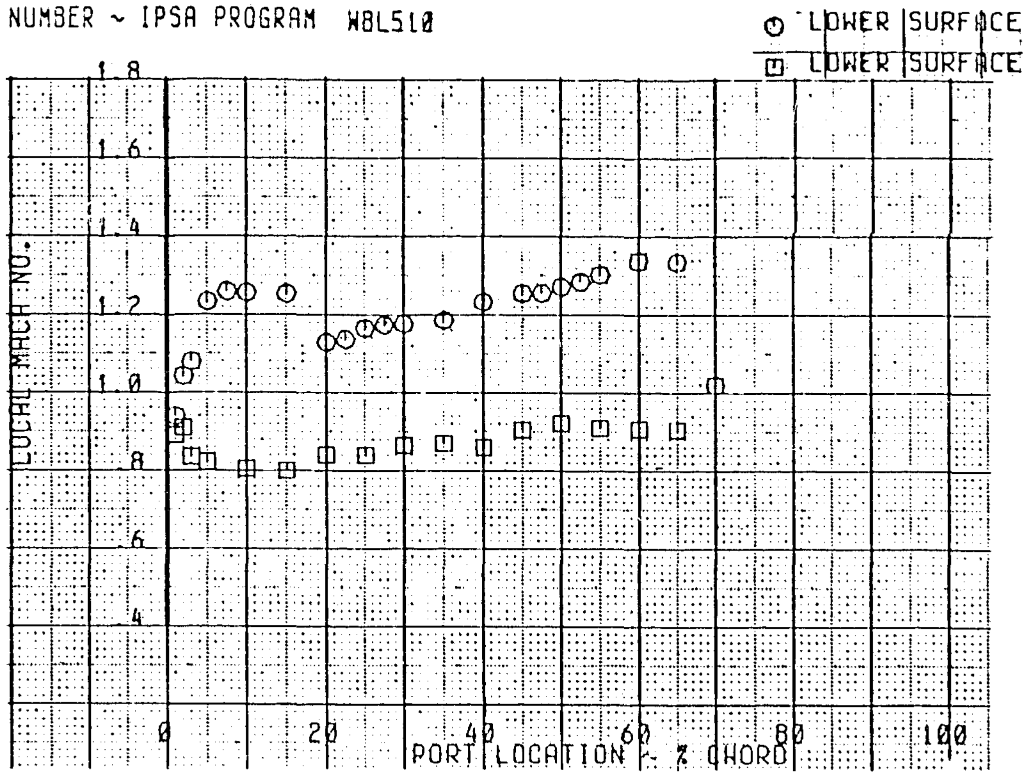


H_p	= 11 909m (39 073 ft)	M	= 0.864
GW	= 219 686 kg (484 325 lbm)	α	= 1.9 deg
Q	= 10.239 kPa (1.485 PSI)	FLAPS = 0 deg	
V_c	= 499.7 km/h (269.8 KTS)	LANDING GEAR UP	

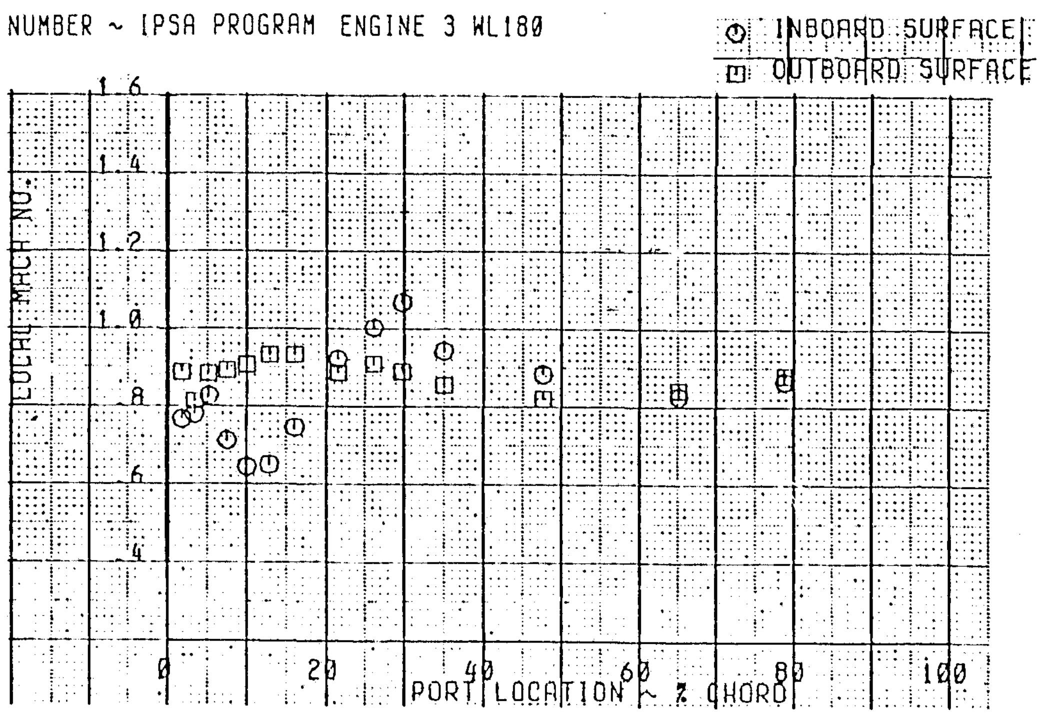
125209-344

Figure B-14. Local Mach Number Plots (Test 273-12, Condition 1.00.137.001.1)

• LOCAL MACH NUMBER ~ IPSA PROGRAM WBL510



• LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 3 WL180

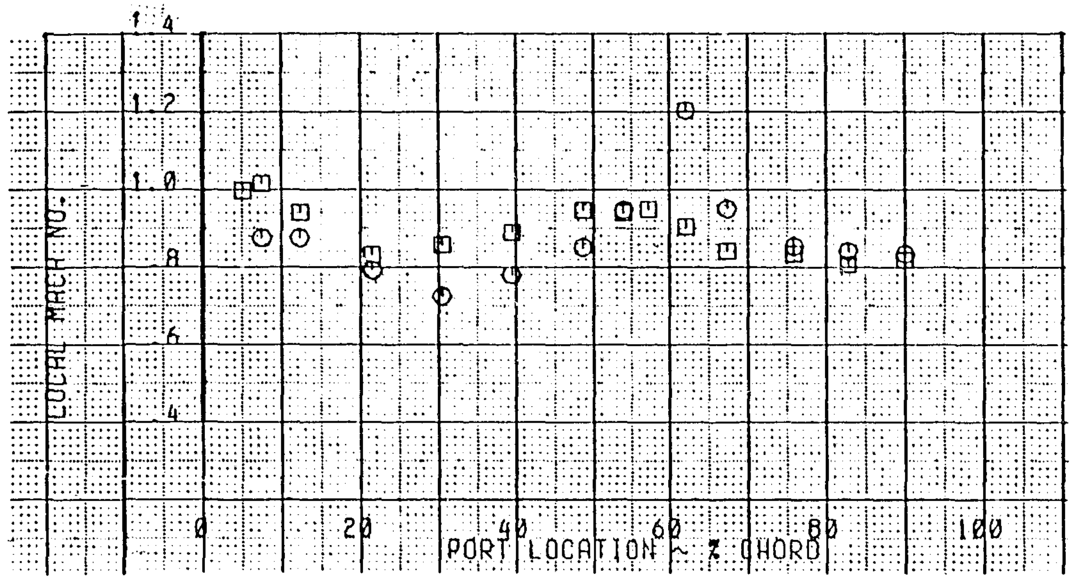


H_p	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
V_c	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

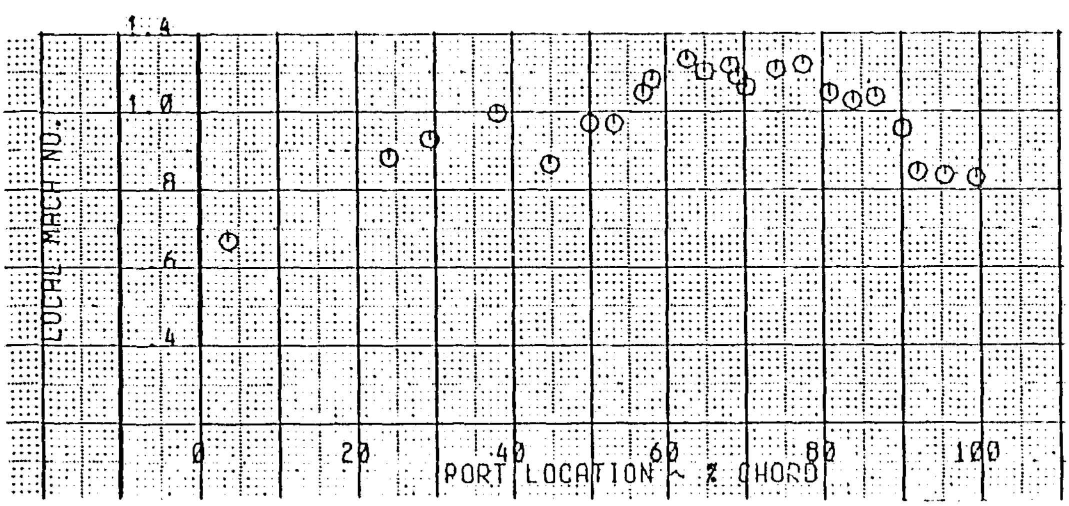
125209-345

Figure B-14. Local Mach Number Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)

• LOCAL MACH NUMBER ~ IPSA PROGRAM
ENGINE 3 WL155



• LOCAL MACH NUMBER ~ IPSA PROGRAM
ENGINE 3 CORE 030 DEG

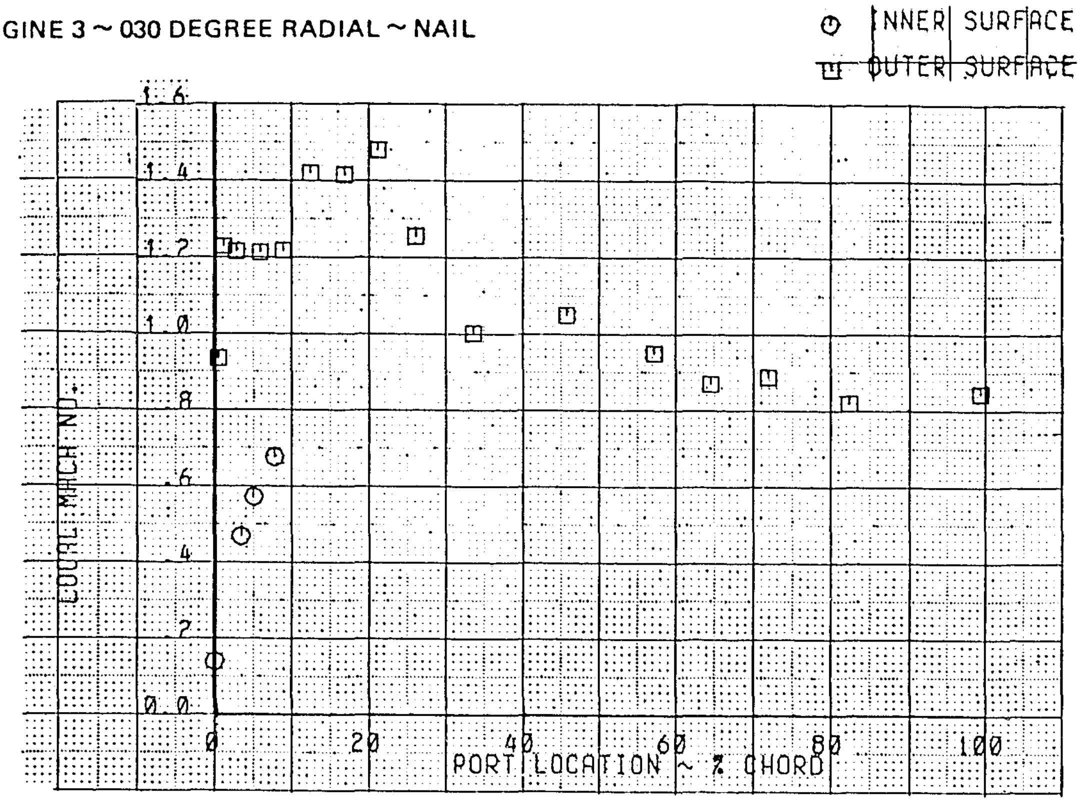


H_p	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
V_c	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

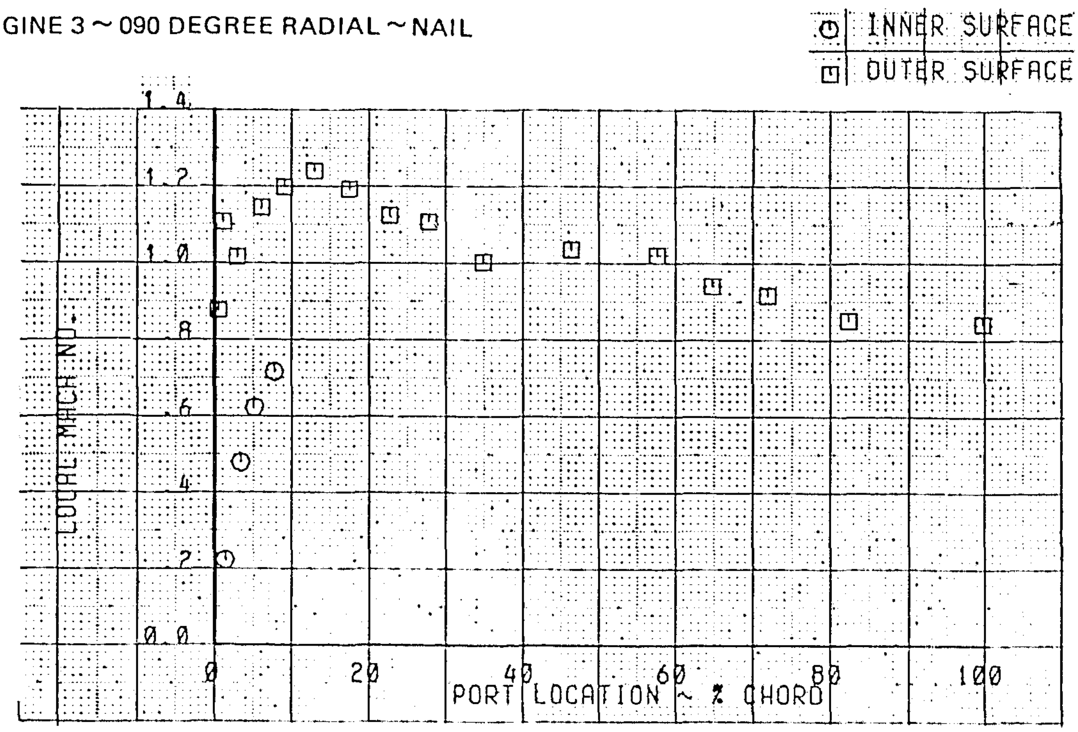
125209-346

Figure B-14. Local Mach Number Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)

● ENGINE 3 ~ 030 DEGREE RADIAL ~ NAIL



● ENGINE 3 ~ 090 DEGREE RADIAL ~ NAIL

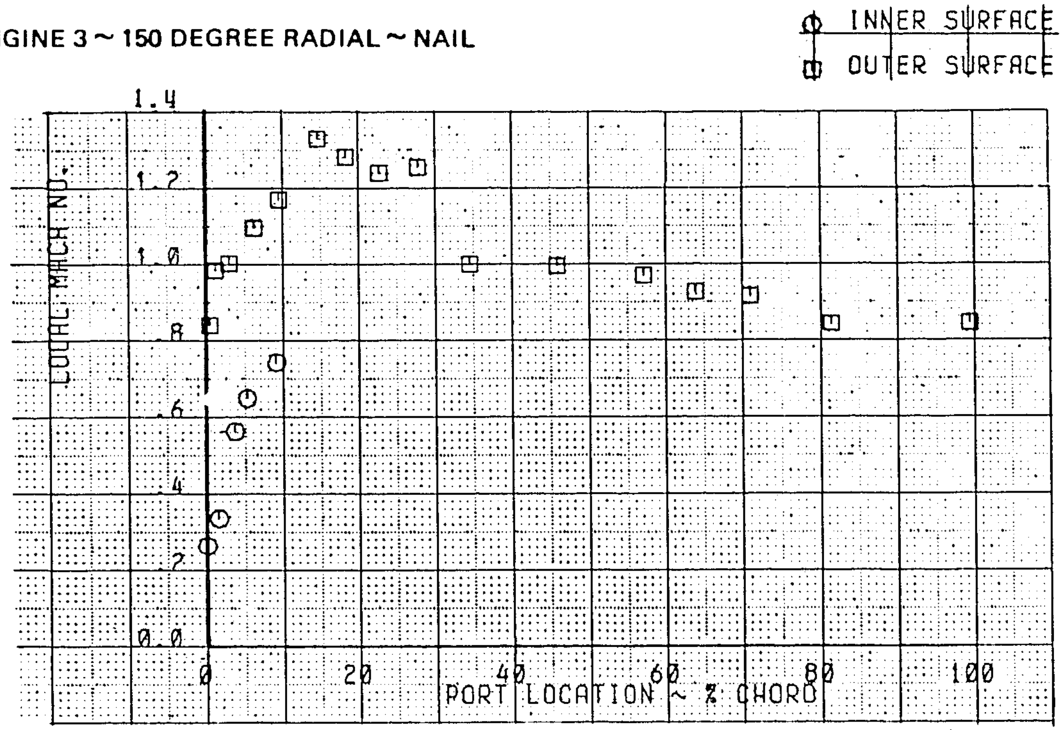


H_P	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
V_c	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

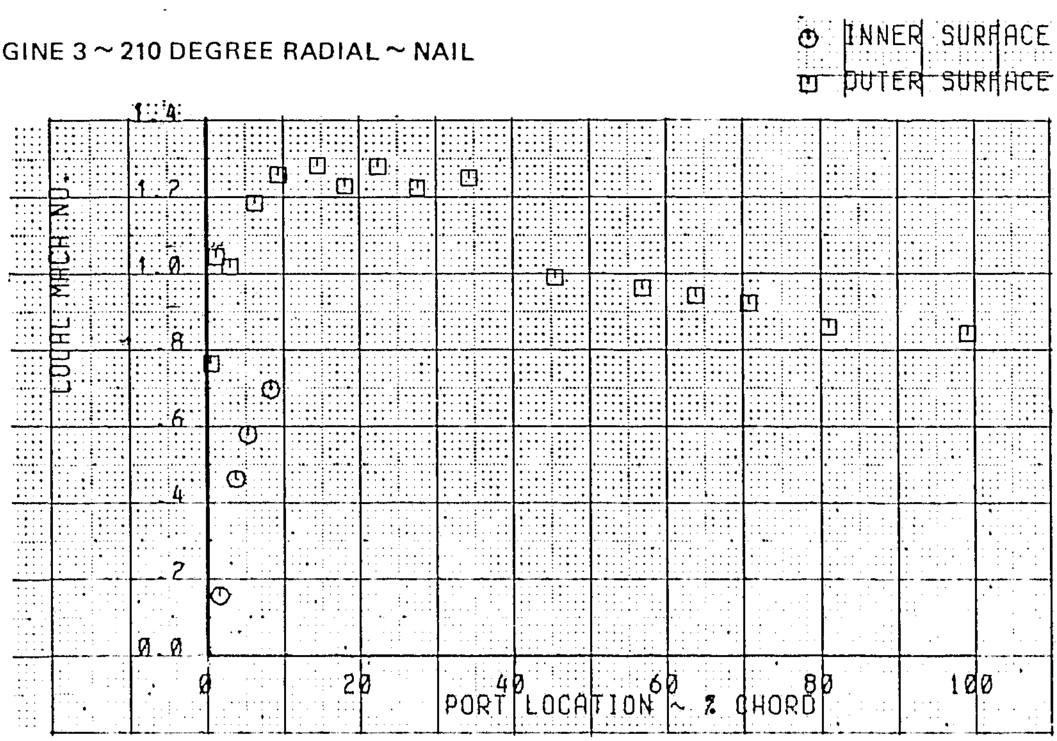
125209-347

Figure B-14. Local Mach Number Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)

● ENGINE 3 ~ 150 DEGREE RADIAL ~ NAIL



● ENGINE 3 ~ 210 DEGREE RADIAL ~ NAIL



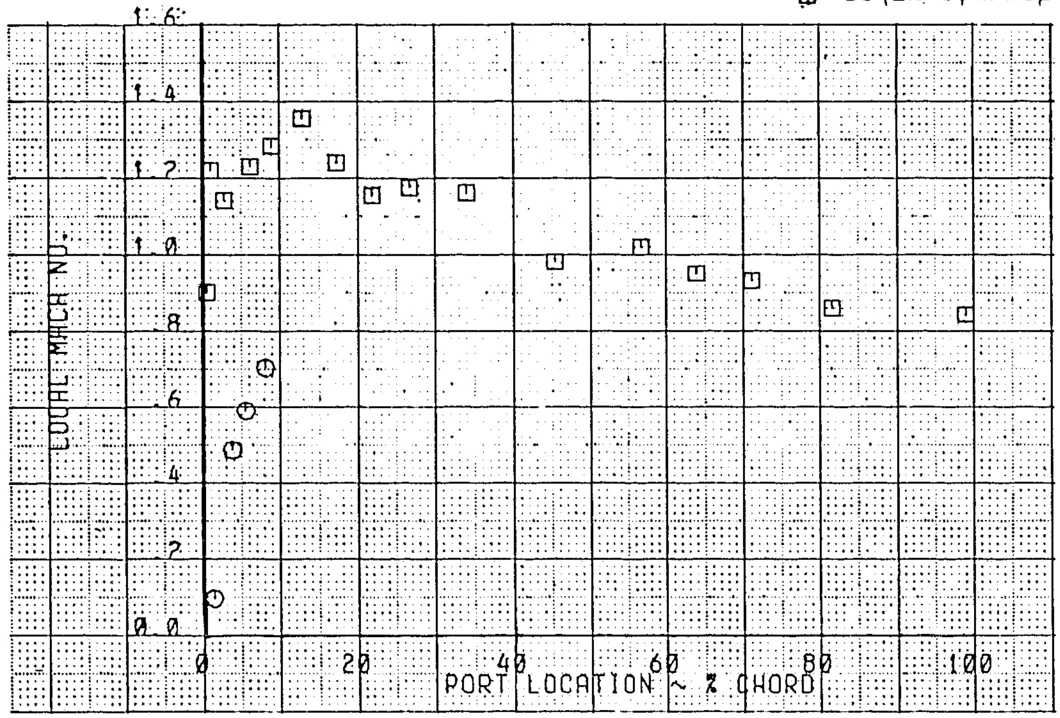
H_P	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
V_c	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

125209-348

Figure B-14. Local Mach Number Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)

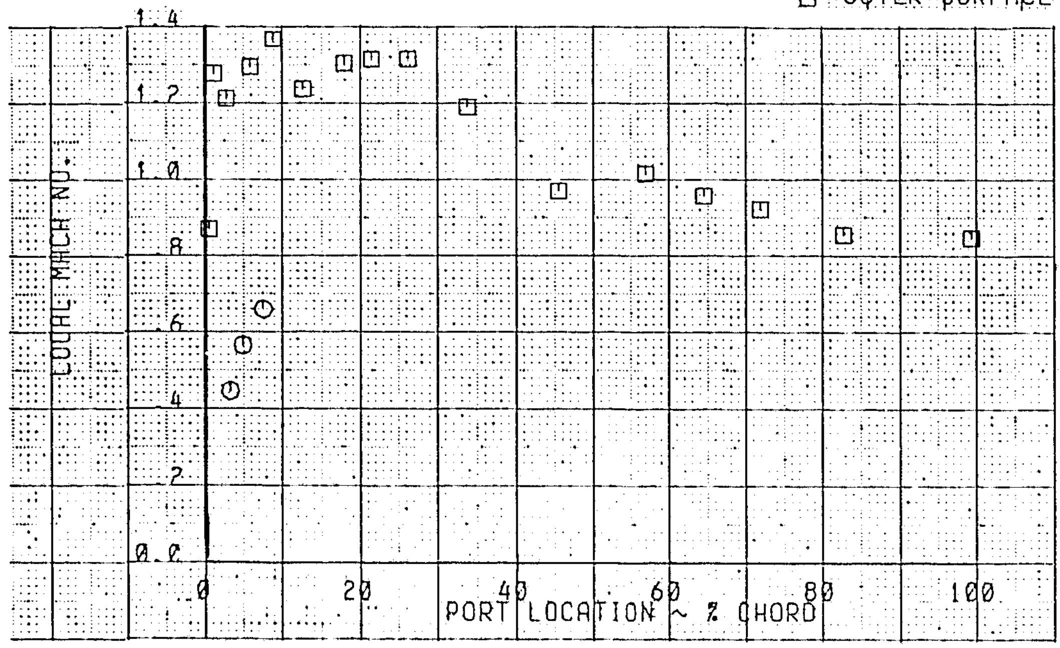
● ENGINE 3 ~ 270 DEGREE RADIAL ~ NAIL PROGRAM

INNER SURFACE
OUTER SURFACE



● ENGINE 3 ~ 330 DEGREE RADIAL ~ NAIL PROGRAM

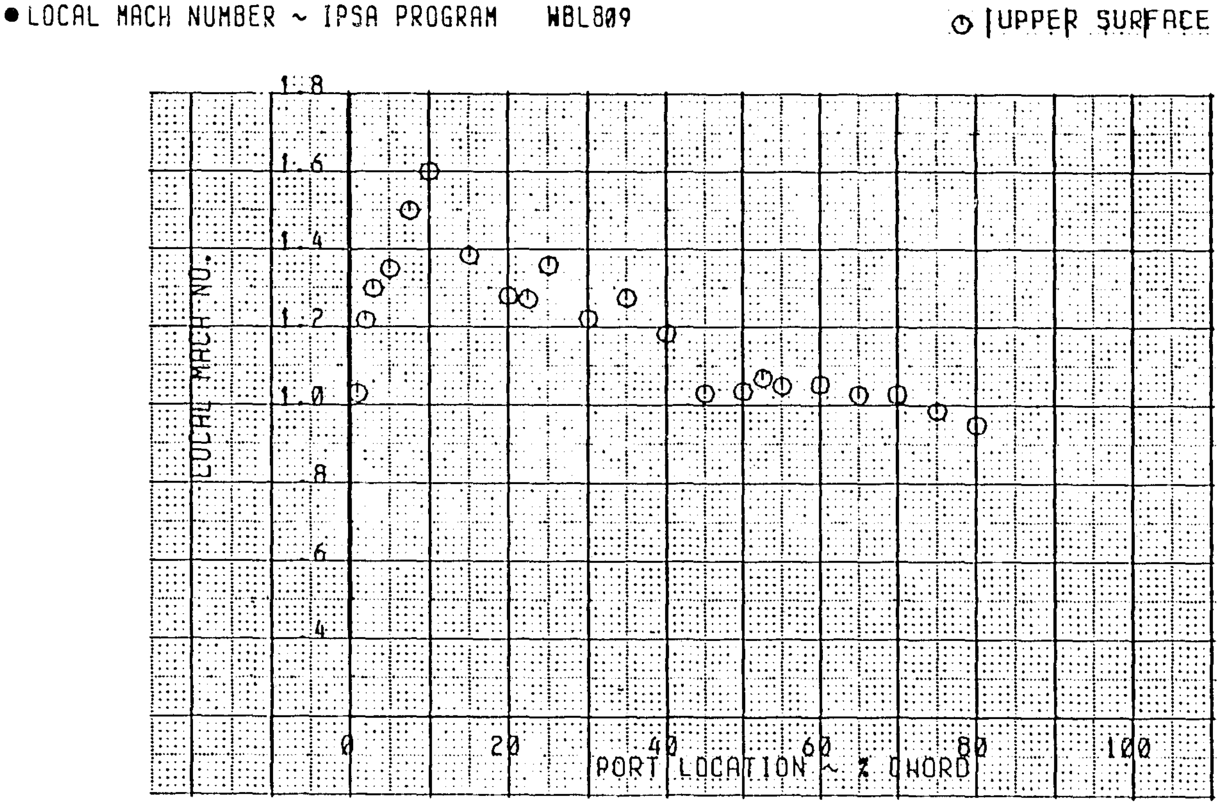
INNER SURFACE
OUTER SURFACE

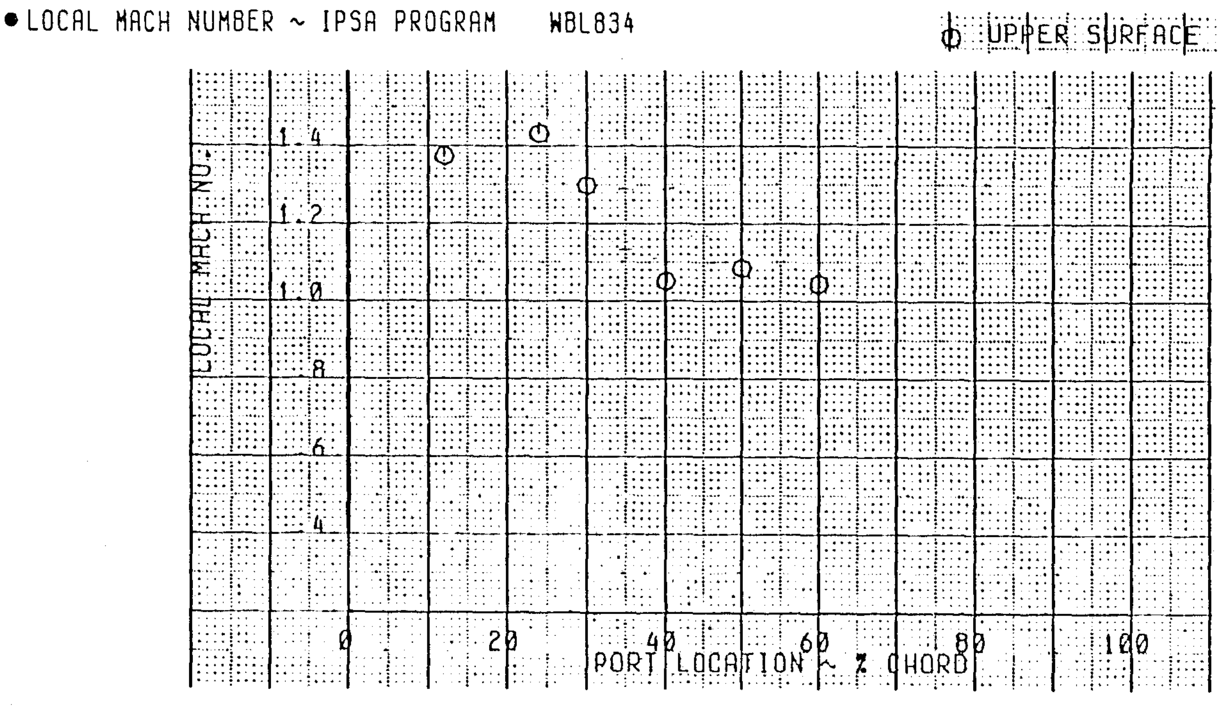


125209-349

H_P	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
V_c	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

Figure B-14. Local Mach Number Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)

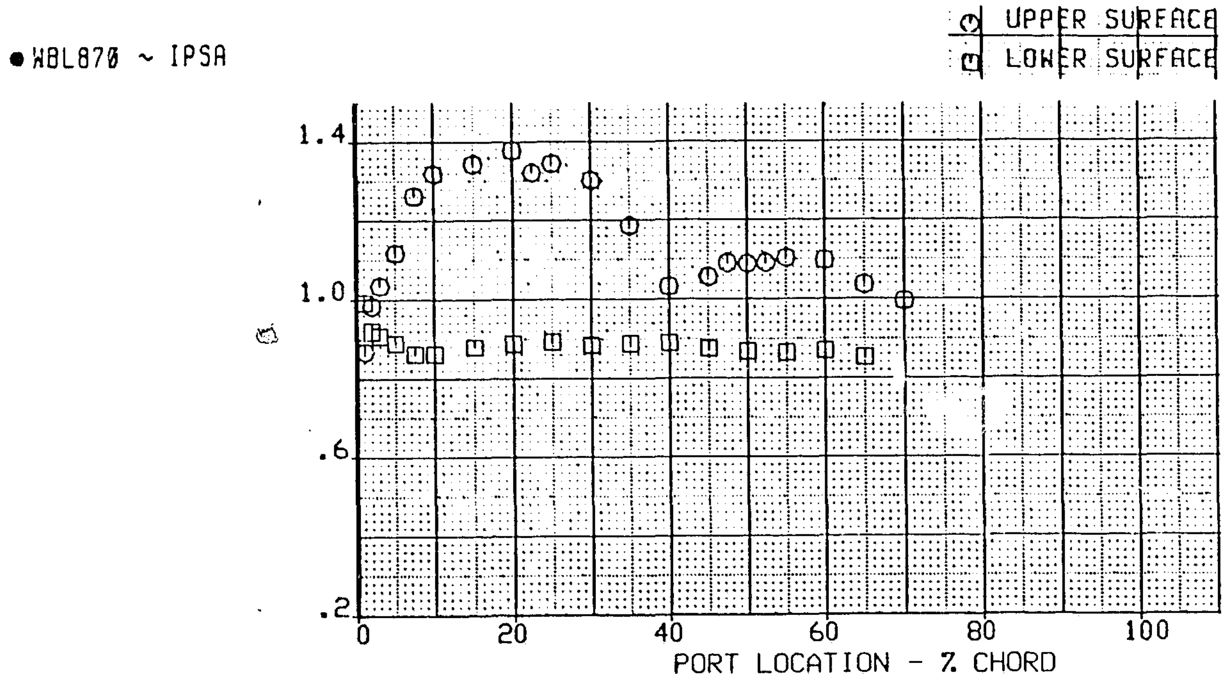


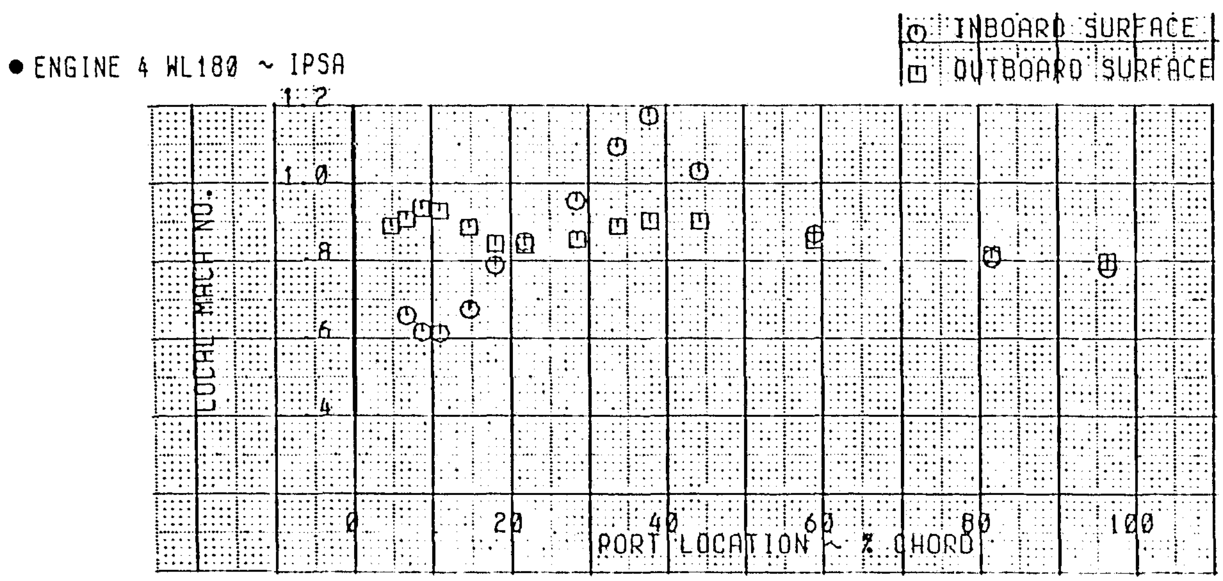


125209-350

H_p	= 11 909m (39 073 ft)	M	= 0.864
GW	= 219 686 kg (484 325 lbm)	α	= 1.9 deg
Q	= 10.239 kPa (1.485 PSI)	FLAPS = 0 deg	
V_c	= 499.7 km/h (269.8 KTS)	LANDING GEAR UP	

Figure B-14. Local Mach Number Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)



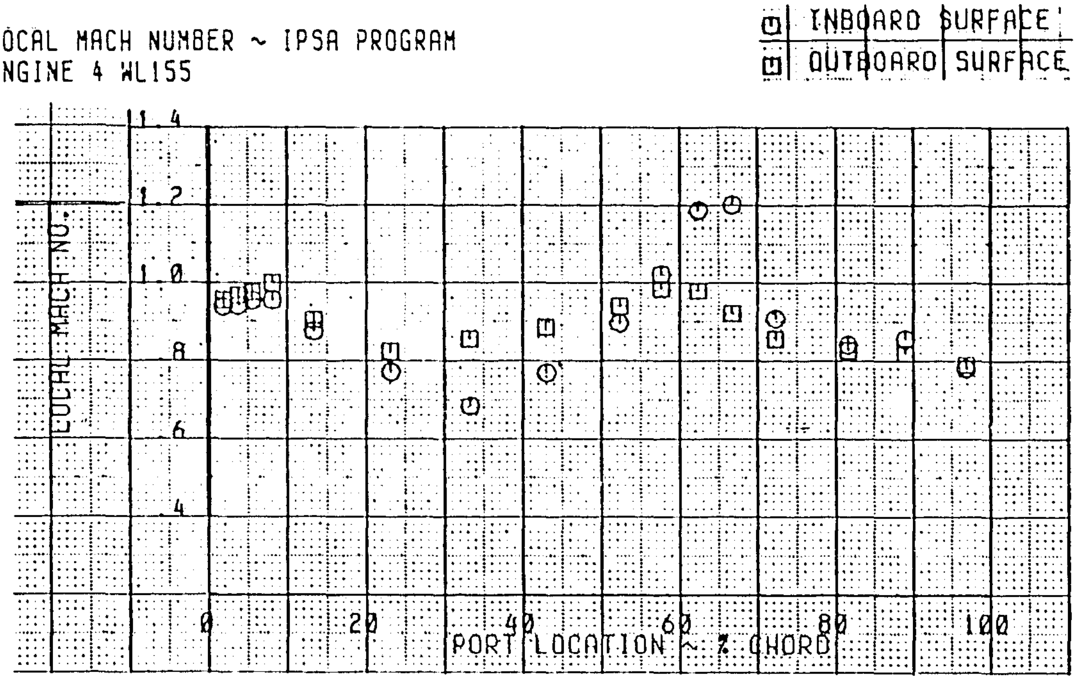


H_p	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
V_c	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

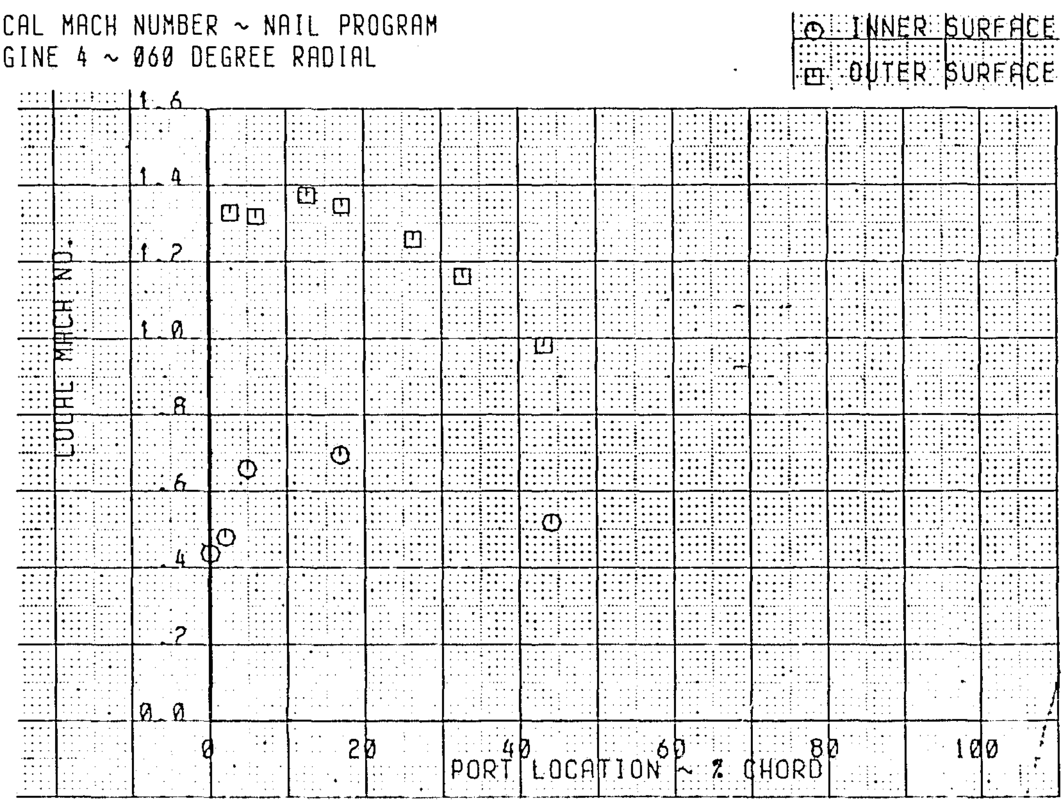
125209-351

Figure B-14. Local Mach Number Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)

• LOCAL MACH NUMBER ~ IPSA PROGRAM
ENGINE 4 WL155



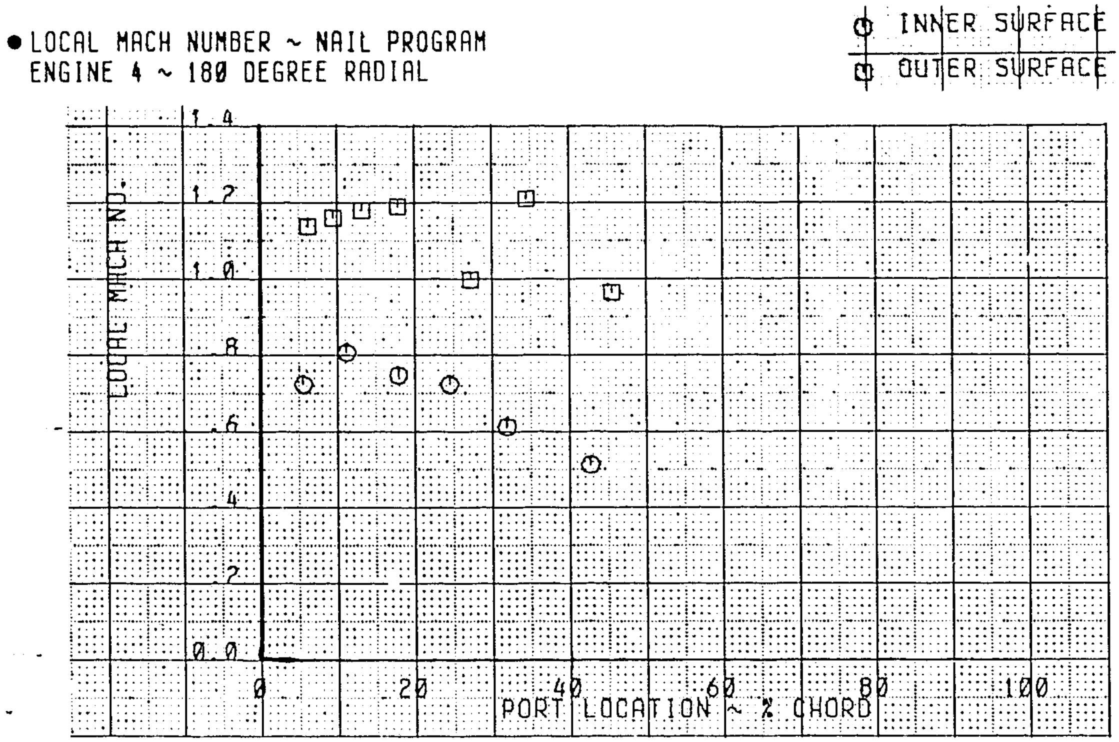
• LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 4 ~ 060 DEGREE RADIAL

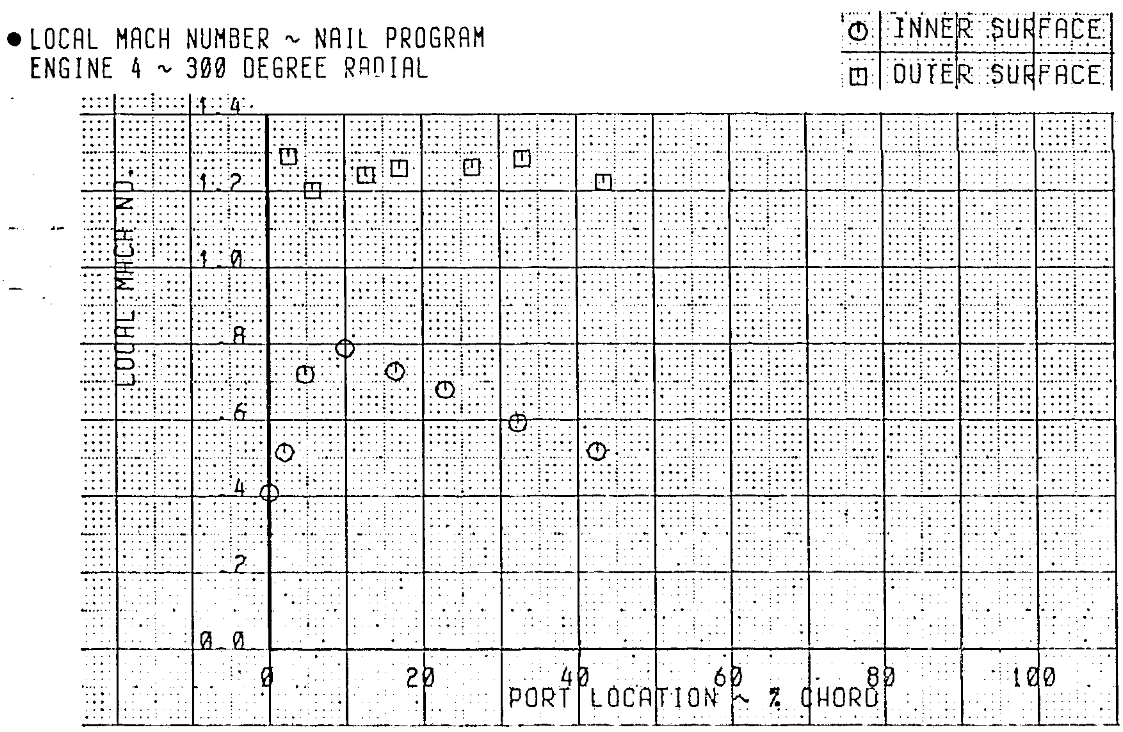


H_p	=	11 909m (39 073 ft)	M	=	0.864
GW	=	219 686 kg (484 325 lbm)	α	=	1.9 deg
Q	=	10.239 kPa (1.485 PSI)	FLAPS = 0 deg		
V_c	=	499.7 km/h (269.8 KTS)	LANDING GEAR UP		

125208-352

Figure B-14. Local Mach Number Plots (Test 273-12, Condition 1.00.137.001.1)(Continued)

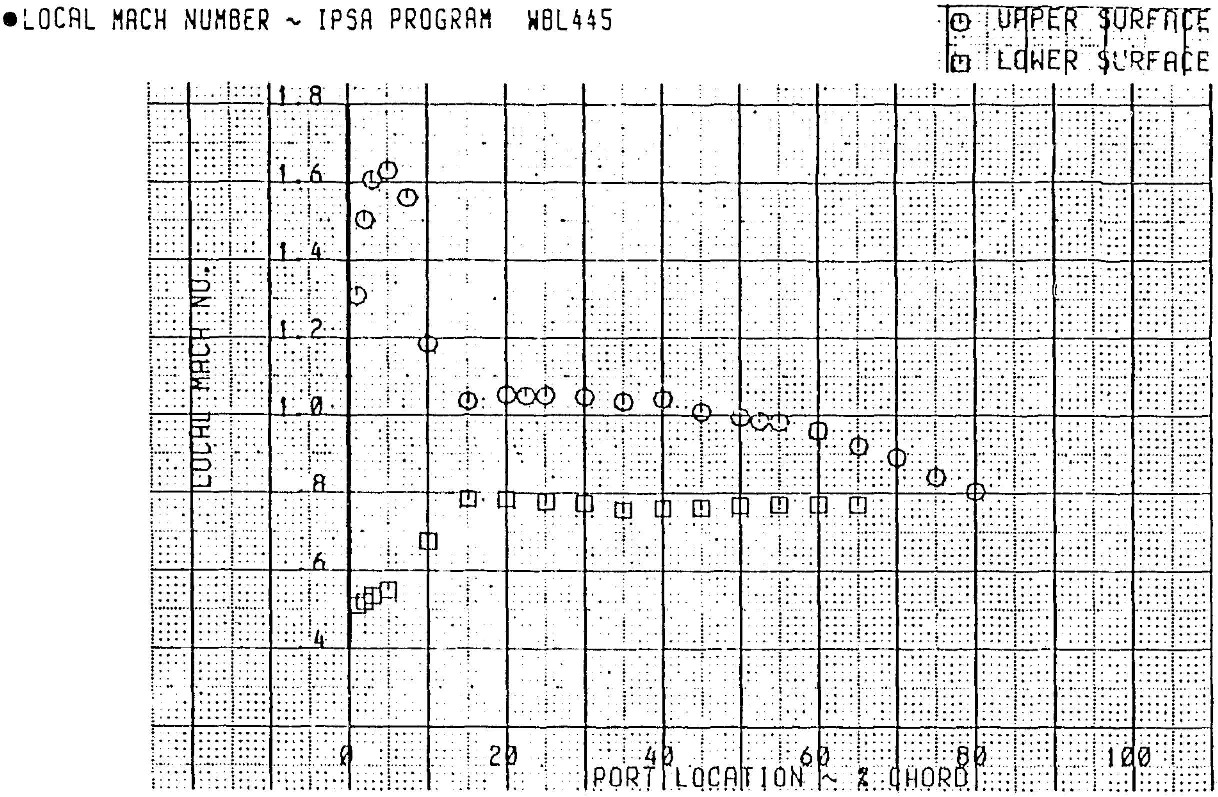


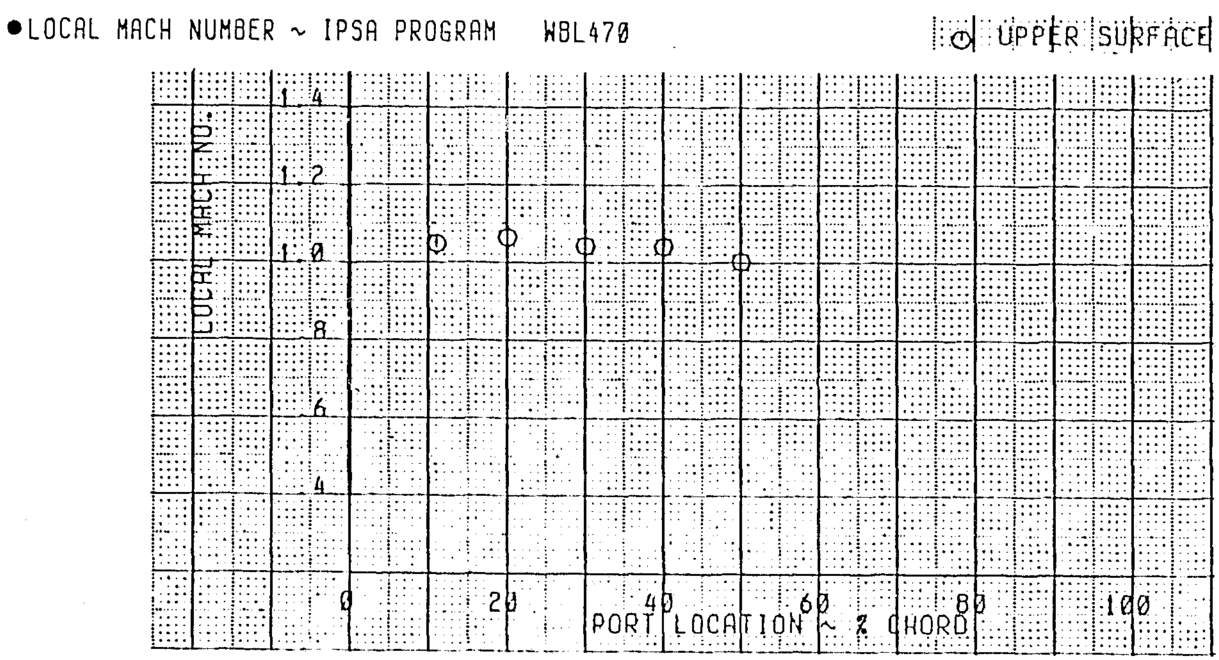


H_p	= 11 909m (39 073 ft)	M	= 0.864
GW	= 219 686 kg (484 325 lbm)	α	= 1.9 deg
Q	= 10.239 kPa (1.485 PSI)	FLAPS = 0 deg	
V_c	= 499.7 km/h (269.8 KTS)	LANDING GEAR UP	

125209-353

Figure B-14. Local Mach Number Plots (Test 273-12, Condition 1.00.137.001.1) (Concluded)



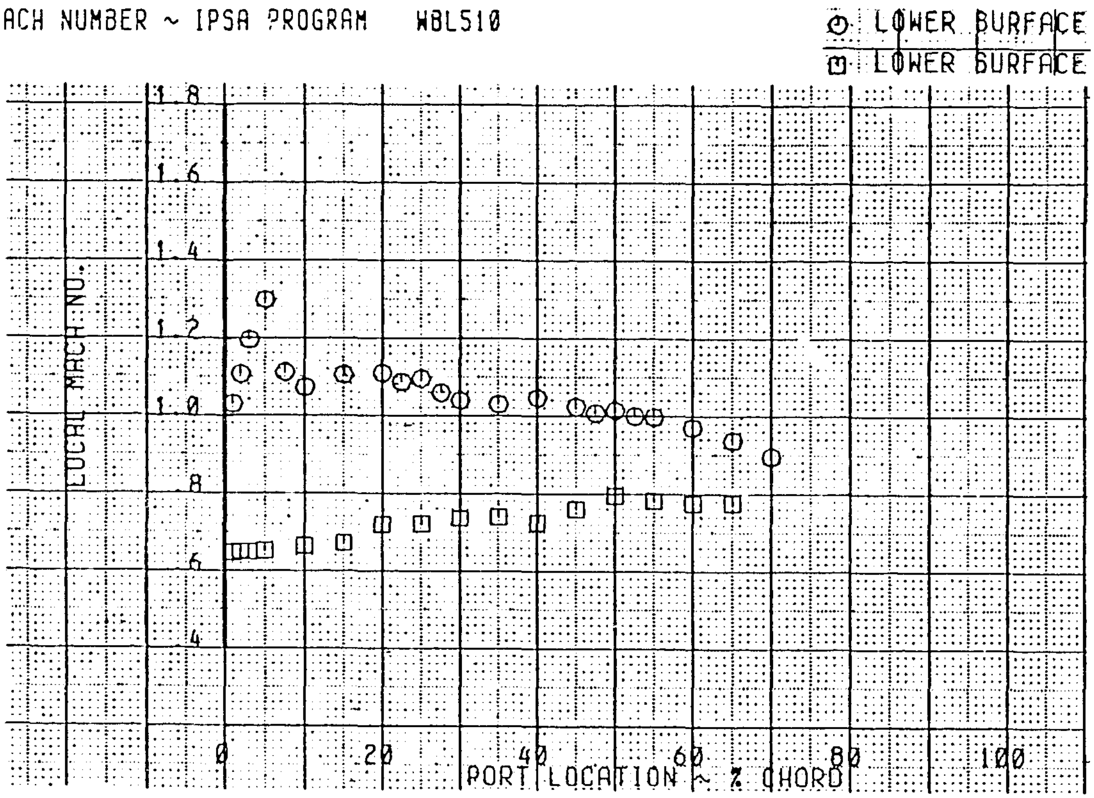


H_P	=	12 029m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	FLAPS = 0 deg		
V_c	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

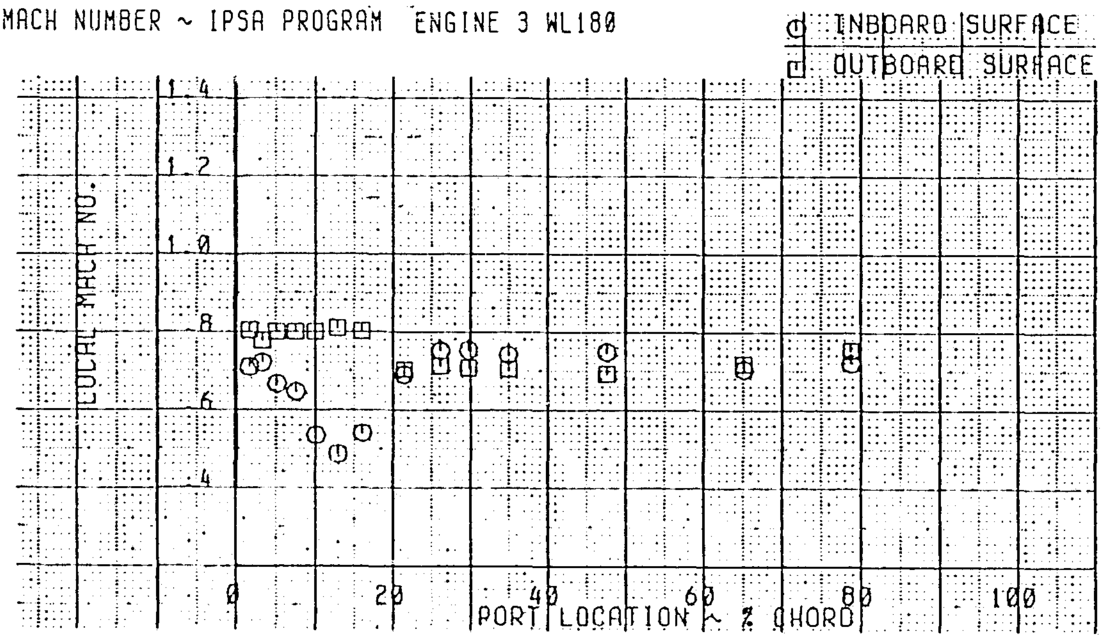
125209-354

Figure B-15. Local Mach Number Plots (Test 273-12, Condition 1.00.137.002)

● LOCAL MACH NUMBER ~ IPSA PROGRAM WBL510



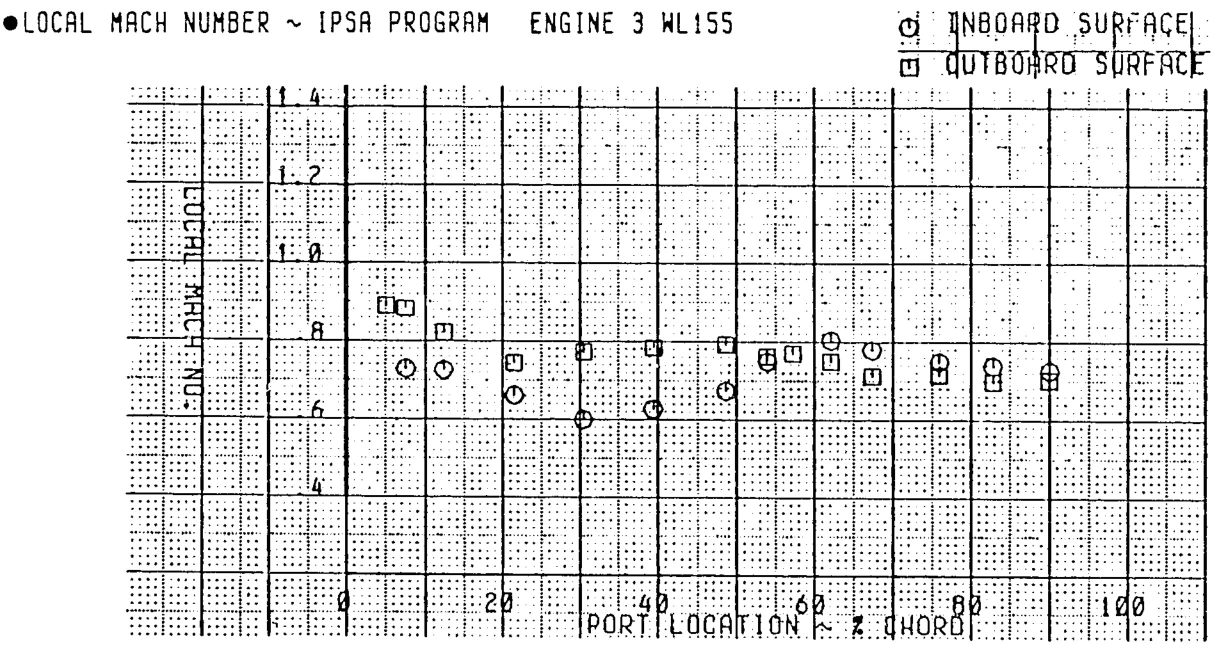
● LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 3 WL180

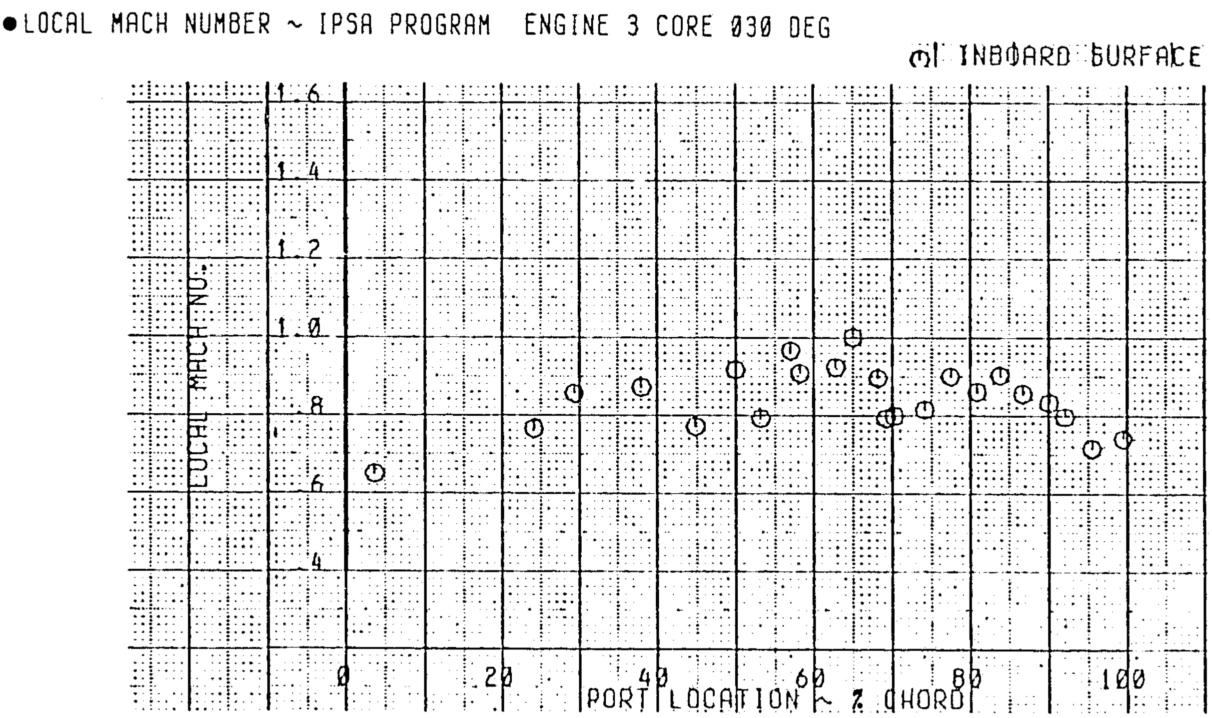


H_P	=	12 029m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	FLAPS = 0 deg		
V_c	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

125209-355

Figure B-15. Local Mach Number Plots (Test 273-12, Condition 1.00.137.002)(Continued)



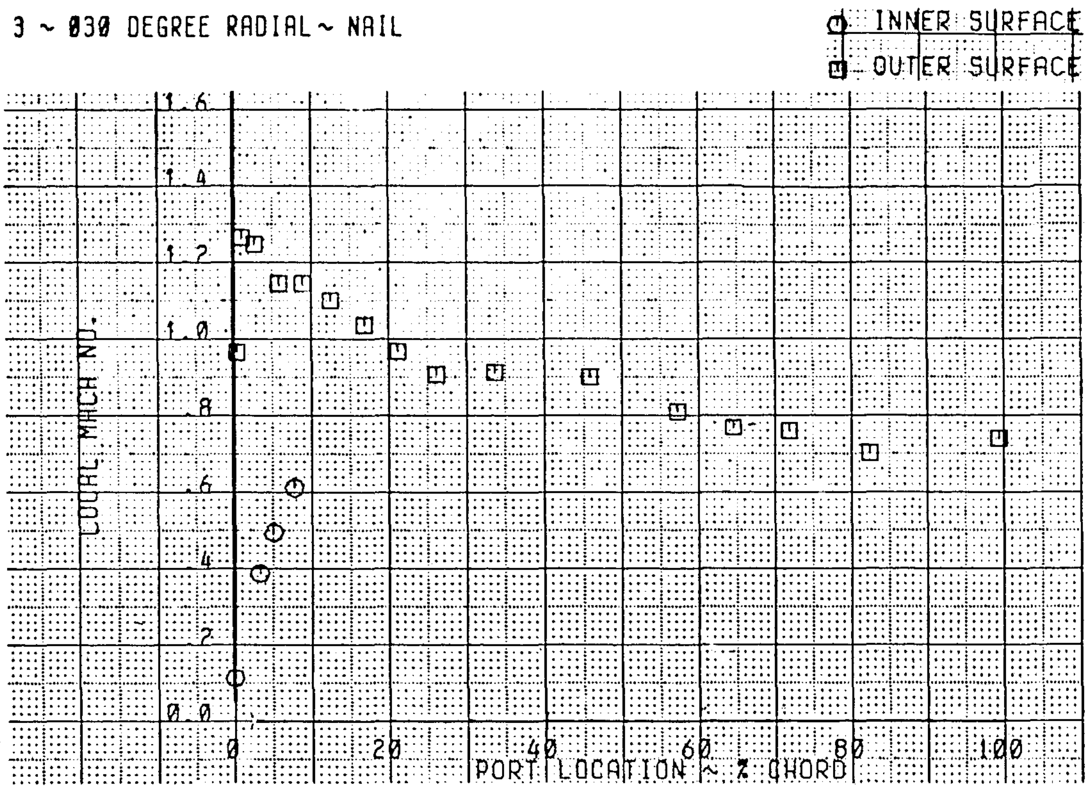


H_P	=	12 029m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	FLAPS = 0 deg		
V_c	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

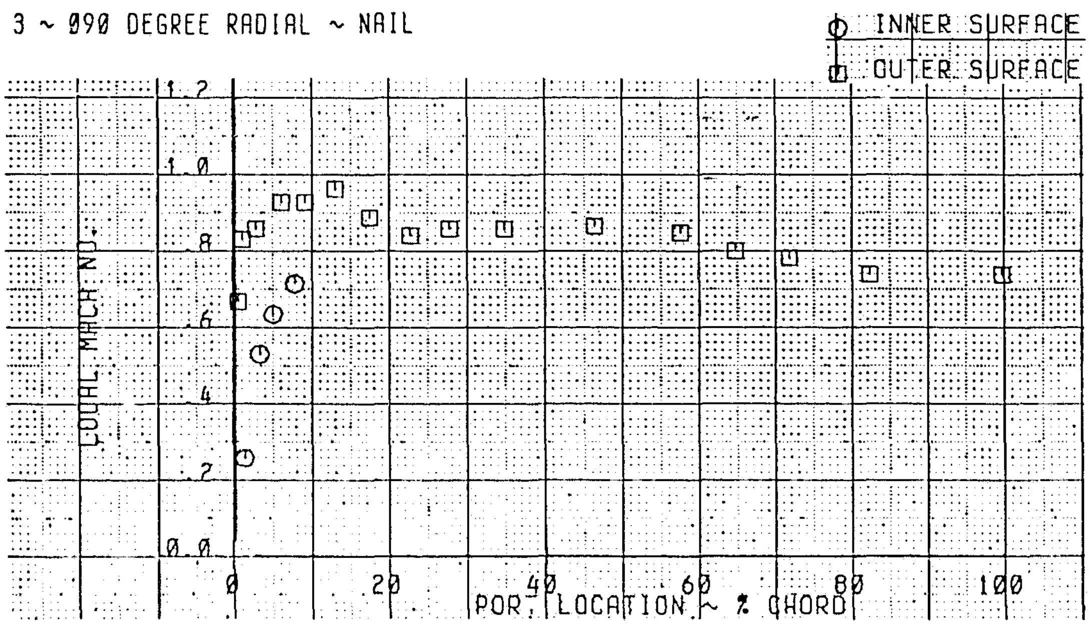
125209-356

Figure B-15. Local Mach Number Plots (Test 273-12, Condition 1.00.137.002)(Continued)

• ENGINE 3 ~ 030 DEGREE RADIAL ~ NAIL



• ENGINE 3 ~ 090 DEGREE RADIAL ~ NAIL

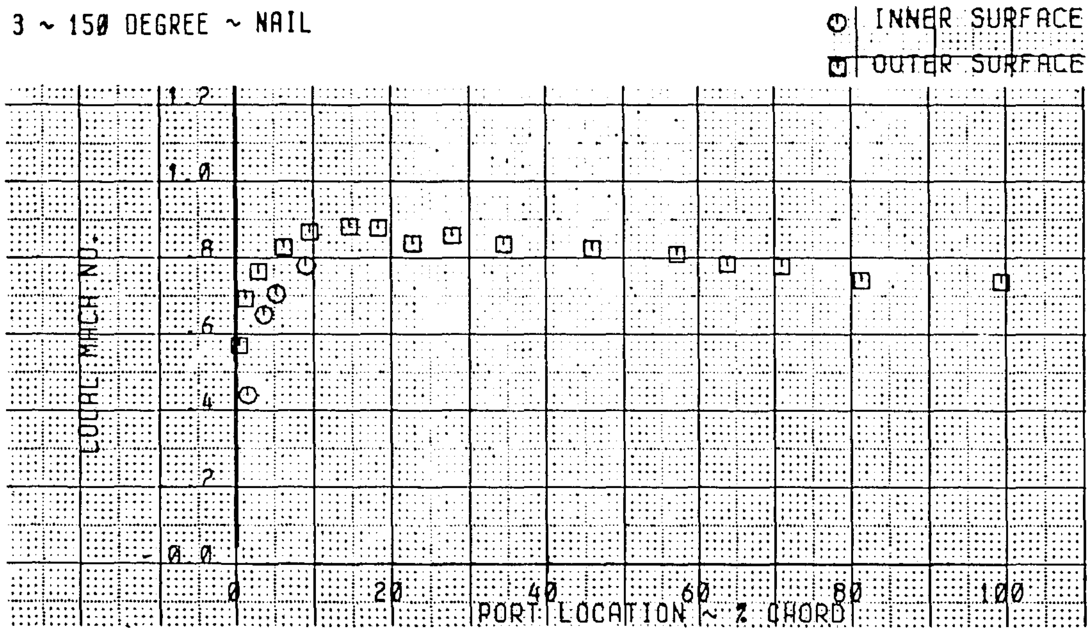


H_p	=	12 029m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	FLAPS	=	0 deg
V_c	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

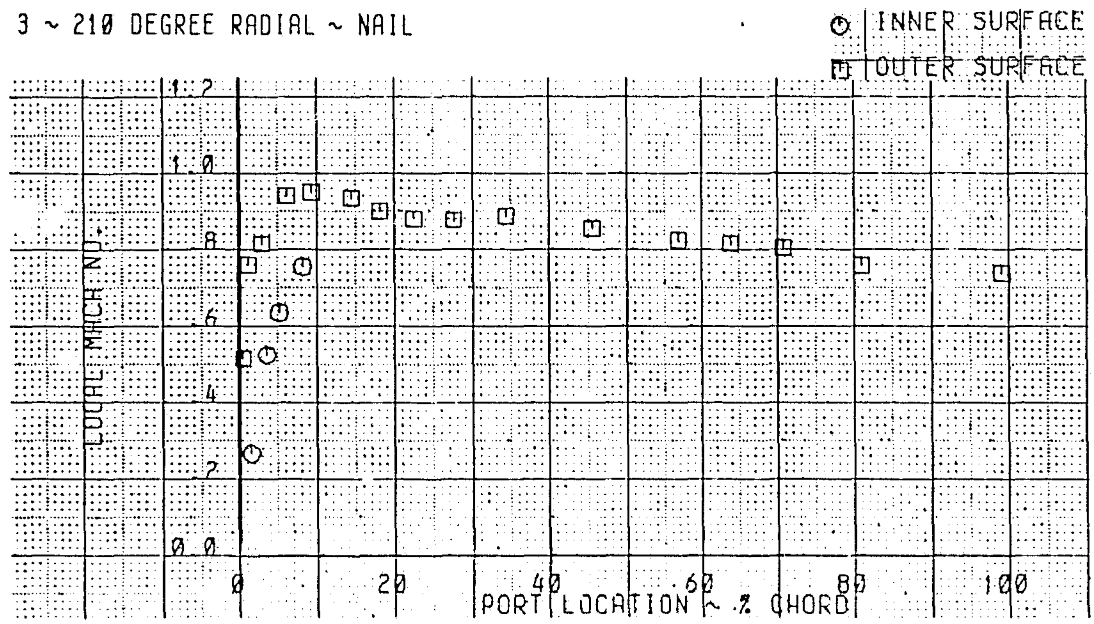
125209-357

Figure B-15. Local Mach Number Plots (Test 273-12, Condition 1.00.137.002)(Continued)

• ENGINE 3 ~ 150 DEGREE ~ NAIL



• ENGINE 3 ~ 210 DEGREE RADIAL ~ NAIL

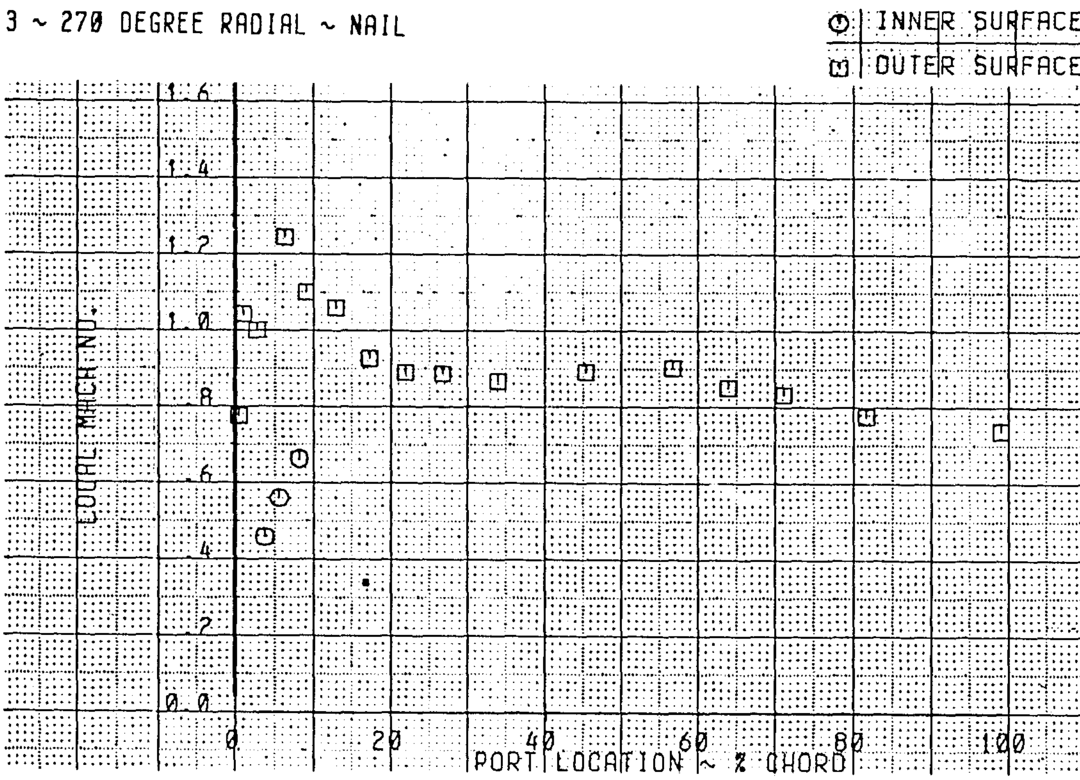


Hp	= 12 029m (39 466 ft)	M	= 0.762
GW	= 216 516 kg (477 337 lbm)	α	= 3.6 deg
Q	= 7.826 kPa (1.135 PSI)	FLAPS = 0 deg	
V_c	= 430.4 km/h (232.4 KTS)	LANDING GEAR UP	

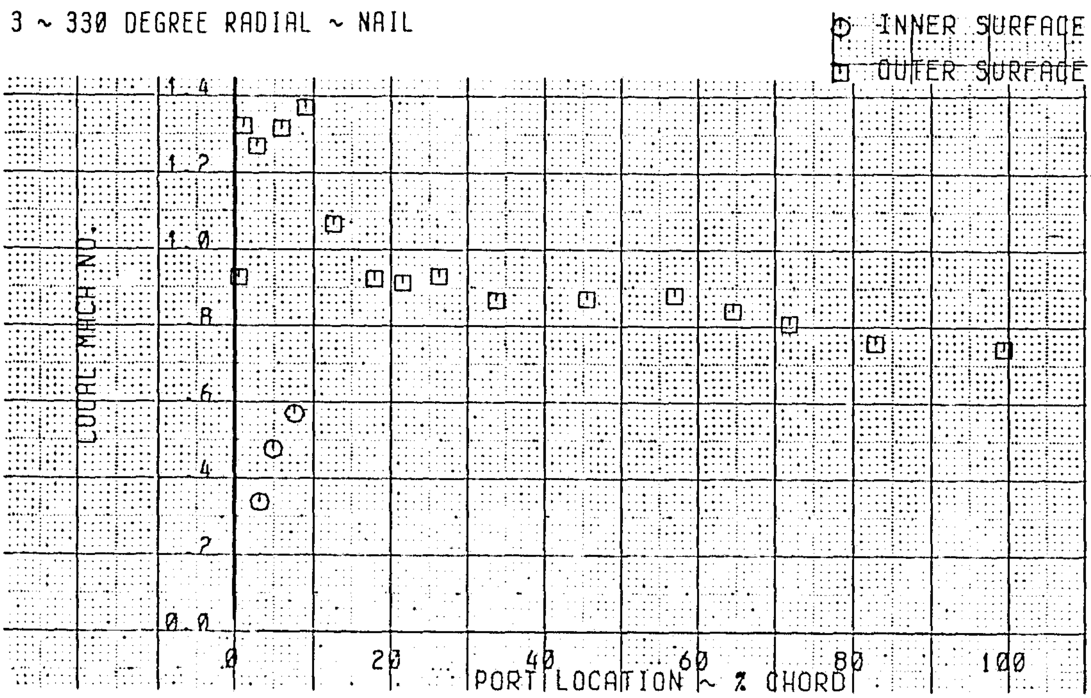
125209-358

Figure B-15. Local Mach Number Plots (Test 273-12, Condition 1.00.137.002)(Continued)

• ENGINE 3 ~ 270 DEGREE RADIAL ~ NAIL



• ENGINE 3 ~ 330 DEGREE RADIAL ~ NAIL

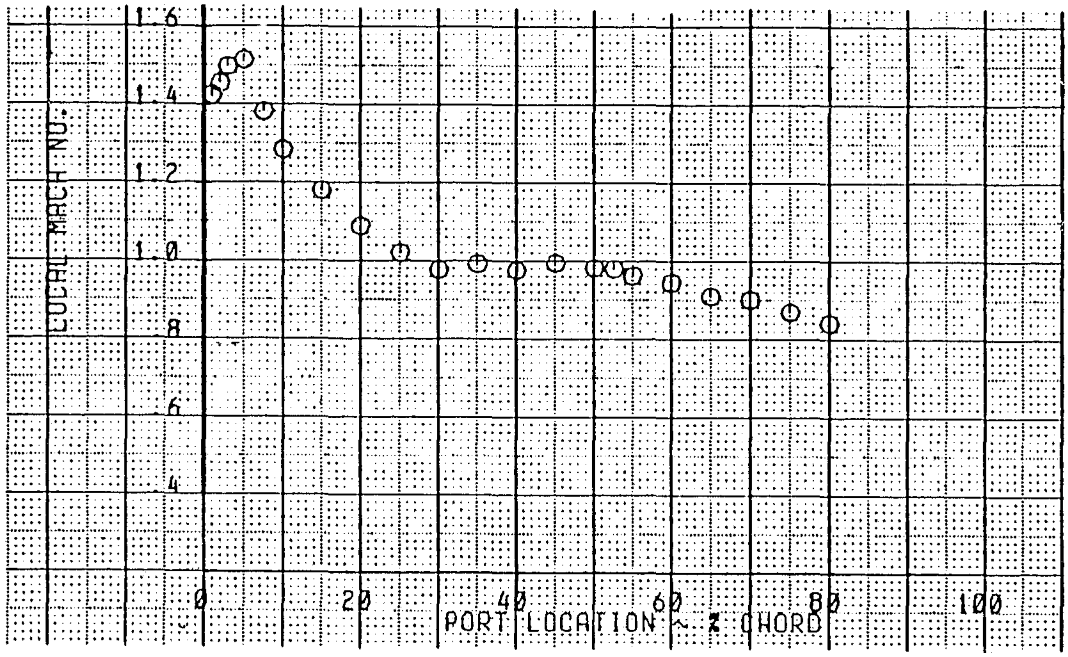


H_p	= 12 029m (39 466 ft)		M	= 0.762
GW	= 216 516 kg (477 337 lbm)		α	= 3.6 deg
Q	= 7.826 kPa (1.135 PSI)		FLAPS = 0 deg	
V_c	= 430.4 km/h (232.4 KTS)		LANDING GEAR UP	

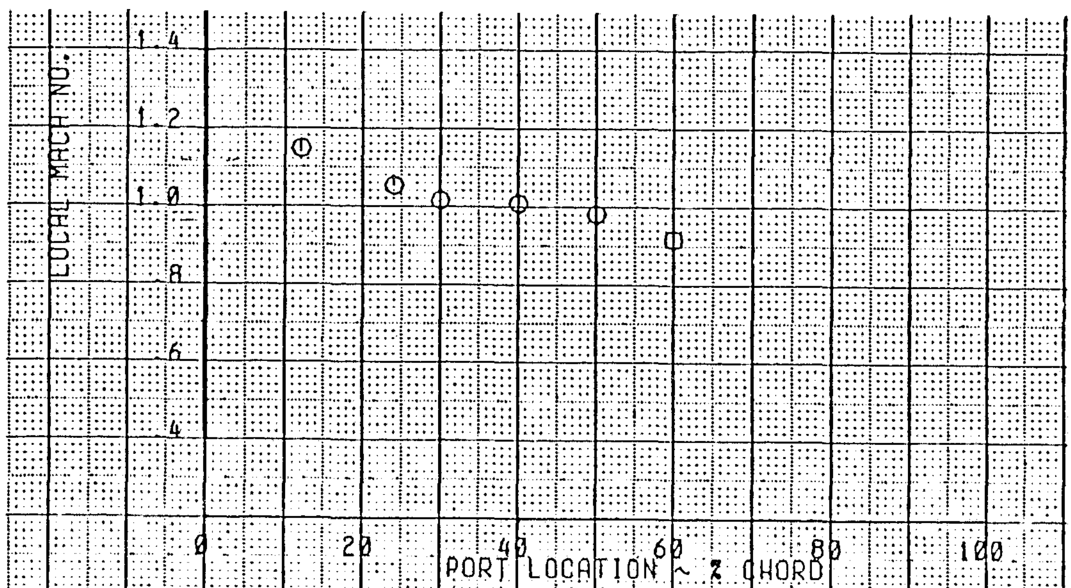
125209-359

Figure B-15. Local Mach Number Plots (Test 273-12, Condition 1.00.137.002)(Continued)

● LOCAL MACH NUMBER ~ IPSA PROGRAM WBL809 ℄ UPPER SURFACE



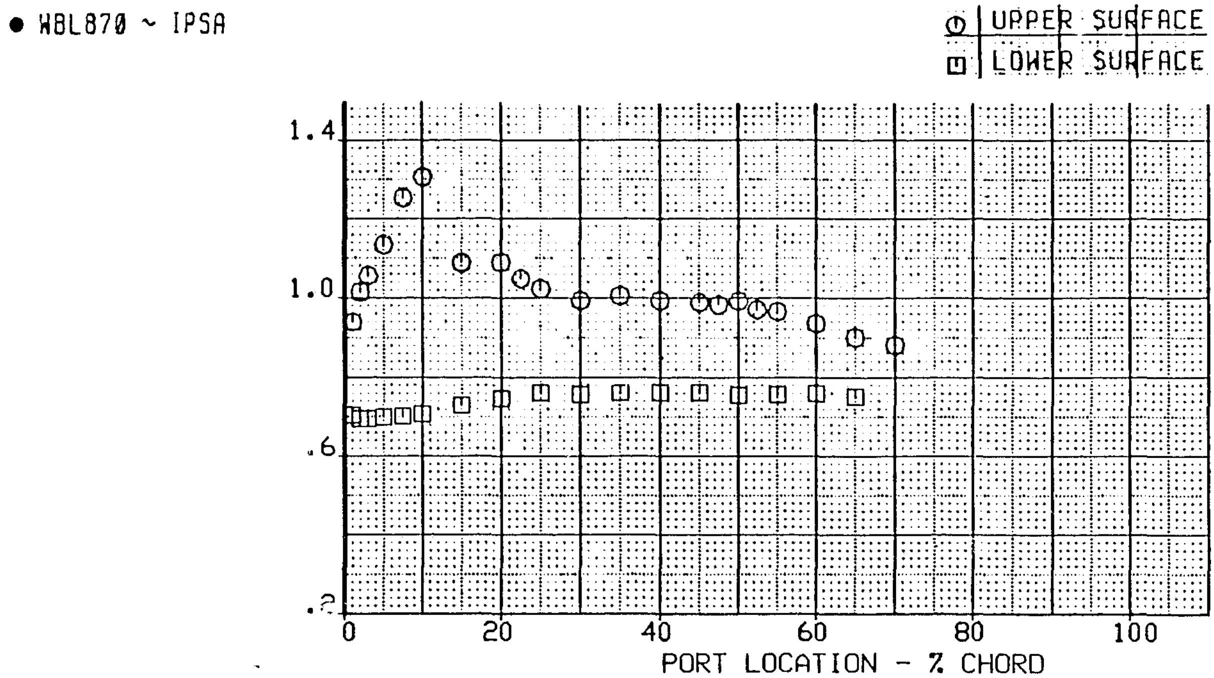
● LOCAL MACH NUMBER ~ IPSA PROGRAM WBL834 ℄ UPPER SURFACE

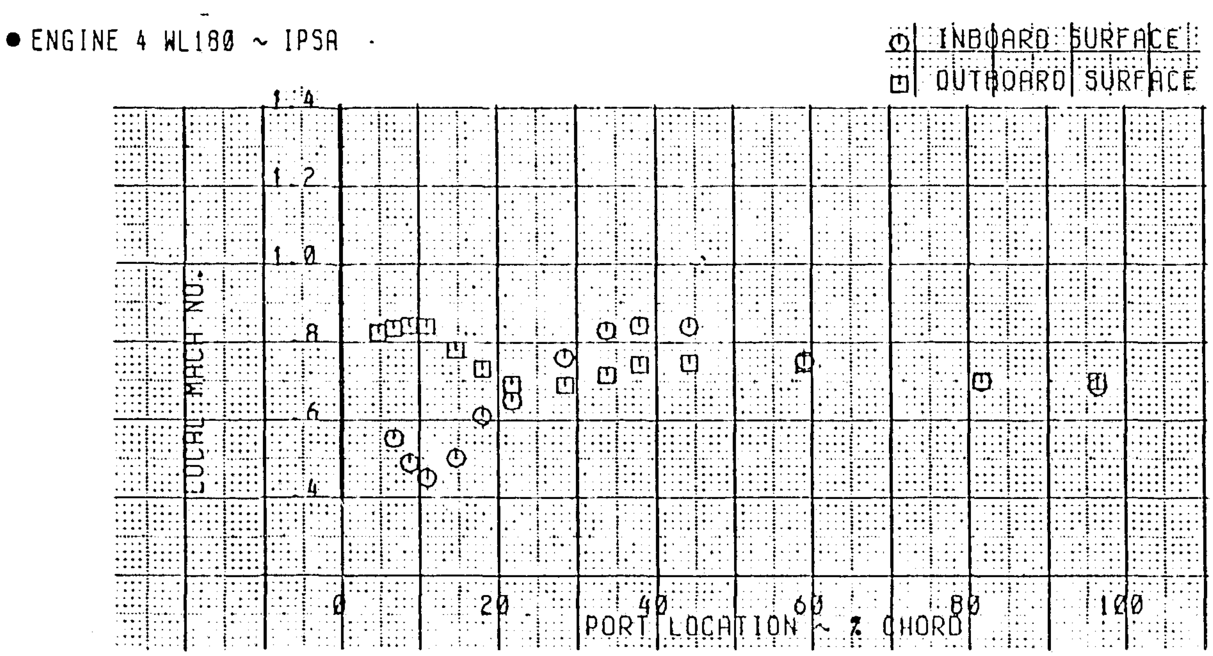


H_p	=	12 029m (39 466 ft)	M	=	0.762
GW	=	216 516 kg (477 337 lbm)	α	=	3.6 deg
Q	=	7.826 kPa (1.135 PSI)	FLAPS = 0 deg		
V_c	=	430.4 km/h (232.4 KTS)	LANDING GEAR UP		

125209-360

Figure B-15. Local Mach Number Plots (Test 273-12, Condition 1.00.137.002)(Continued)



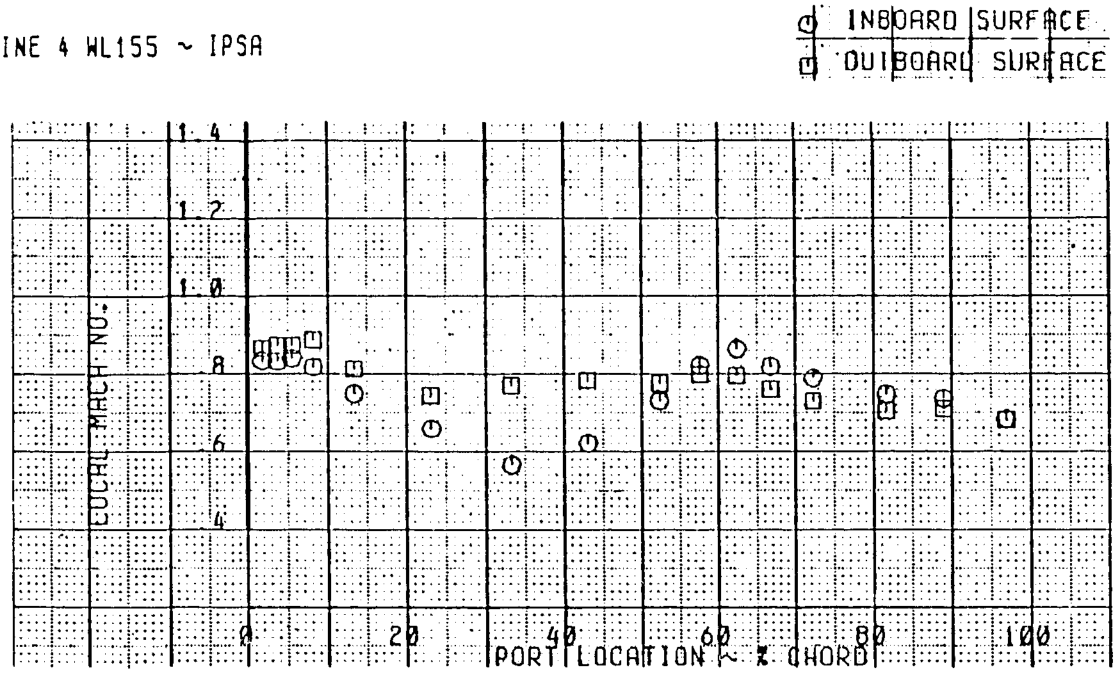


Hp	= 12 029m (39 466 ft)	M	= 0.762
GW	= 216 516 kg (477 337 lbm)	α	= 3.6 deg
Q	= 7.826 kPa (1.135 PSI)	FLAPS = 0 deg	
V_c	= 430.4 km/h (232.4 KTS)	LANDING GEAR UP	

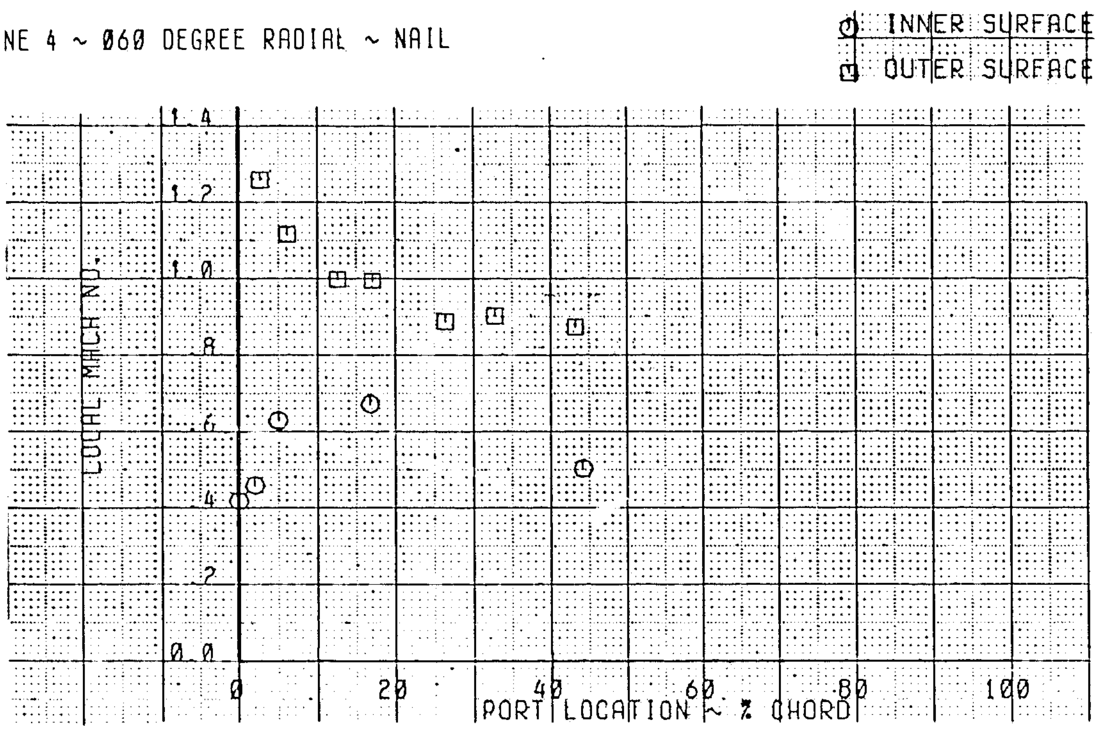
125209-361

Figure B-15. Local Mach Number Plots (Test 273-12, Condition 1.00.137.002)(Continued)

● ENGINE 4 WL155 ~ IPSA



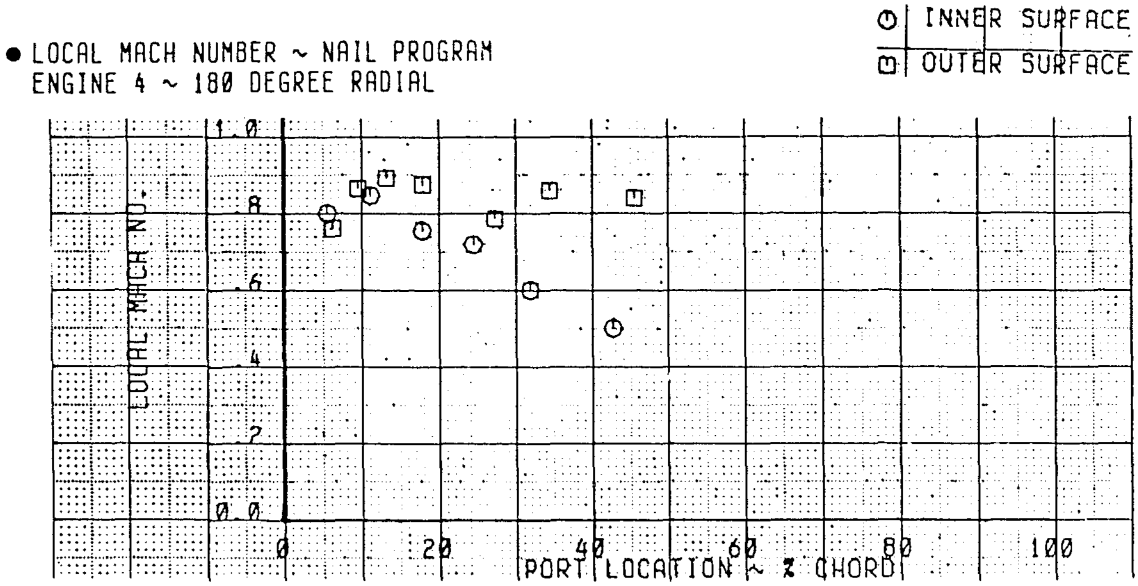
● ENGINE 4 ~ 060 DEGREE RADIAL ~ NAIL

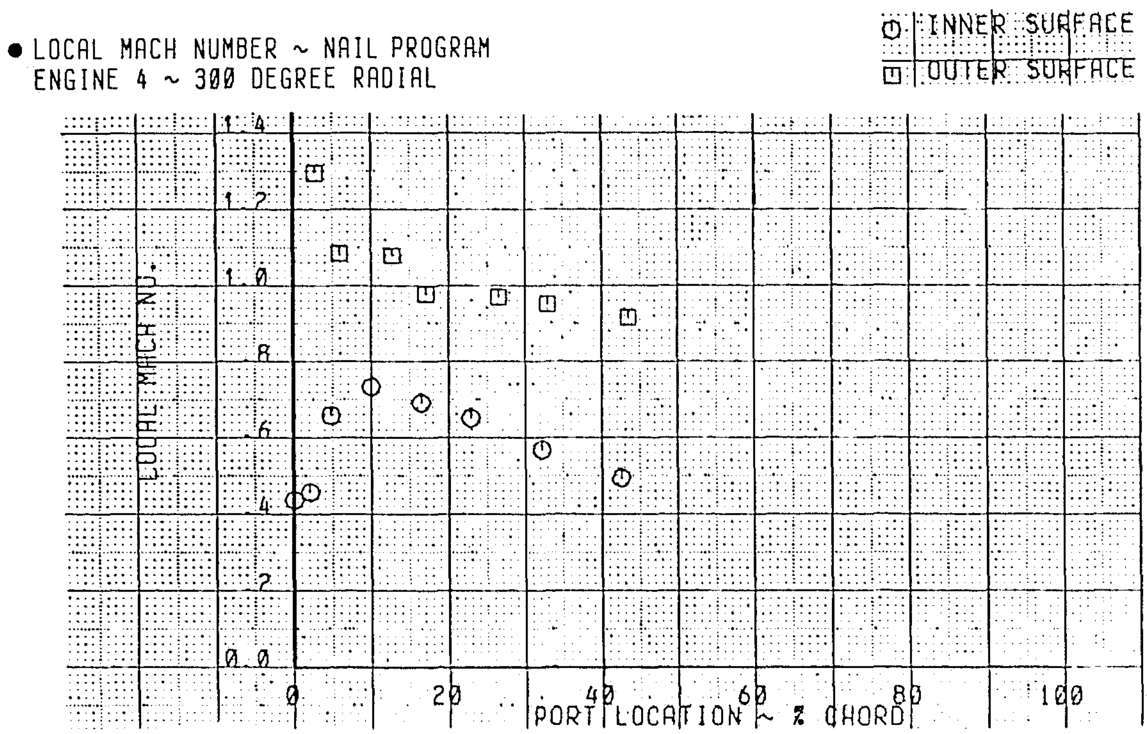


H_P = 12 029m (39 466 ft)		M = 0.762	
GW = 216 516 kg (477 337 lbm)		α = 3.6 deg	
Q = 7.826 kPa (1.135 PSI)		FLAPS = 0 deg	
V_c = 430.4 km/h (232.4 KTS)		LANDING GEAR UP	

Figure B-15. Local Mach Number Plots (Test 273-12, Condition 1.00.137.002)(Continued)

125209-362



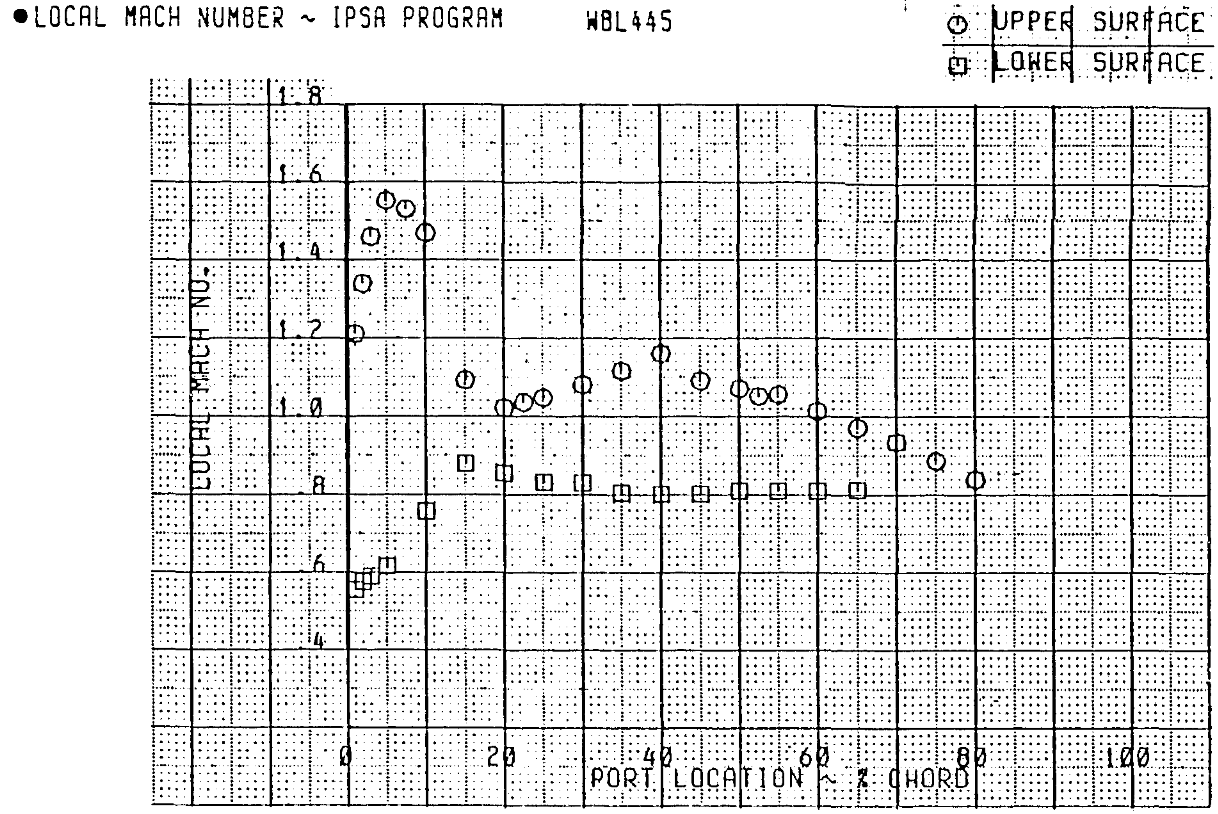


H_P	= 12 029m (39 466 ft)	M	= 0.762
GW	= 216 516 kg (477 337 lbm)	α	= 3.6 deg
Q	= 7.826 kPa (1.135 PSI)	FLAPS = 0 deg	
V_c	= 430.4 km/h (232.4 KTS)	LANDING GEAR UP	

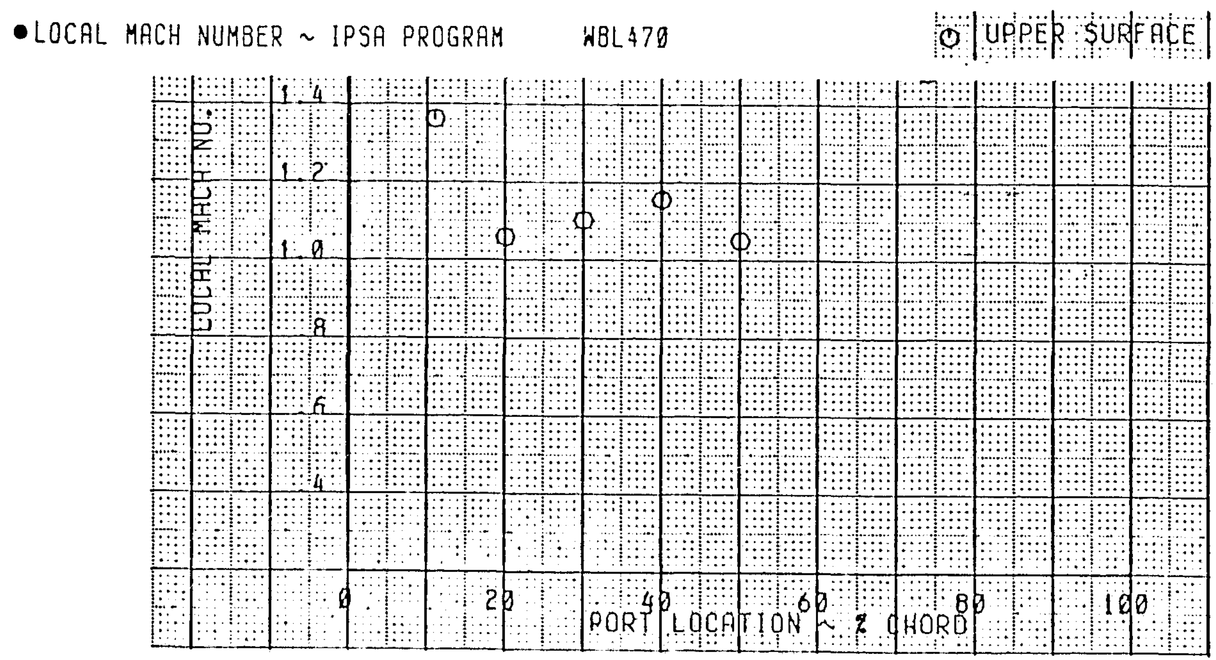
Figure B-15. Local Mach Number Plots (Test 273-12, Condition 1.00.137.002) (Concluded)

125209-363

●LOCAL MACH NUMBER ~ IPSA PROGRAM WBL445



●LOCAL MACH NUMBER ~ IPSA PROGRAM WBL470

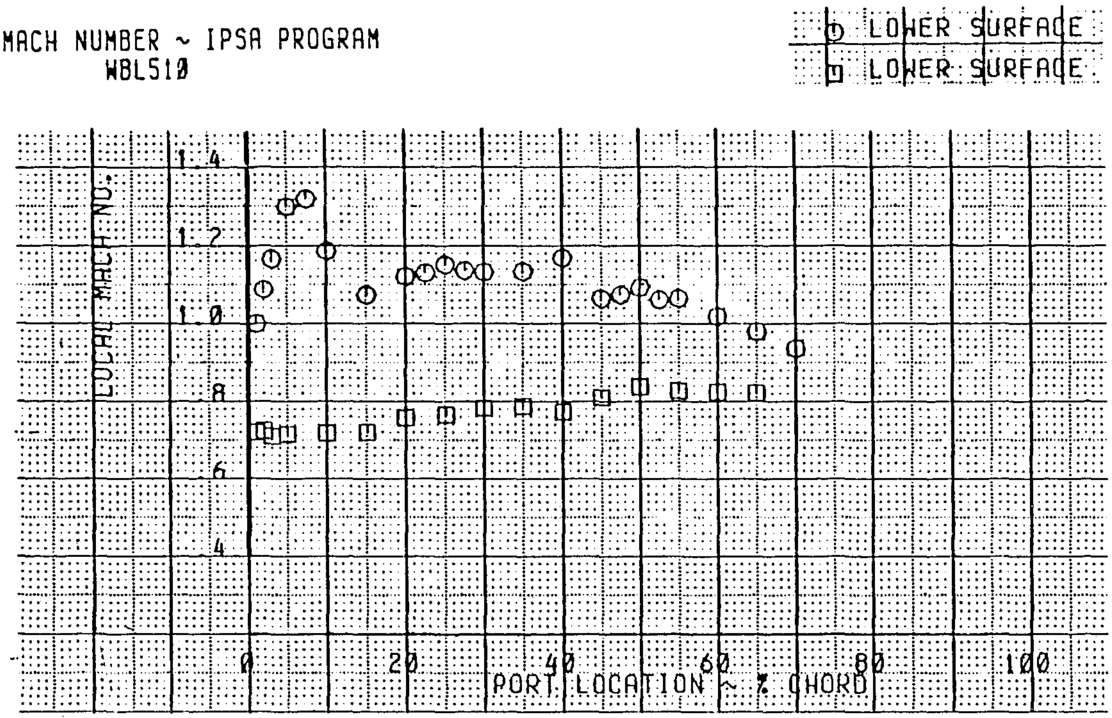


H_p	=	12 002m (39 376 ft)	M	=	0.800
GW	=	218 881 kg (482 550 lbm)	α	=	2.9 deg
Q	=	8.660 kPa (1.256 PSI)	FLAPS = 0 deg		
V_c	=	455.2 km/h (245.8 KTS)	LANDING GEAR UP		

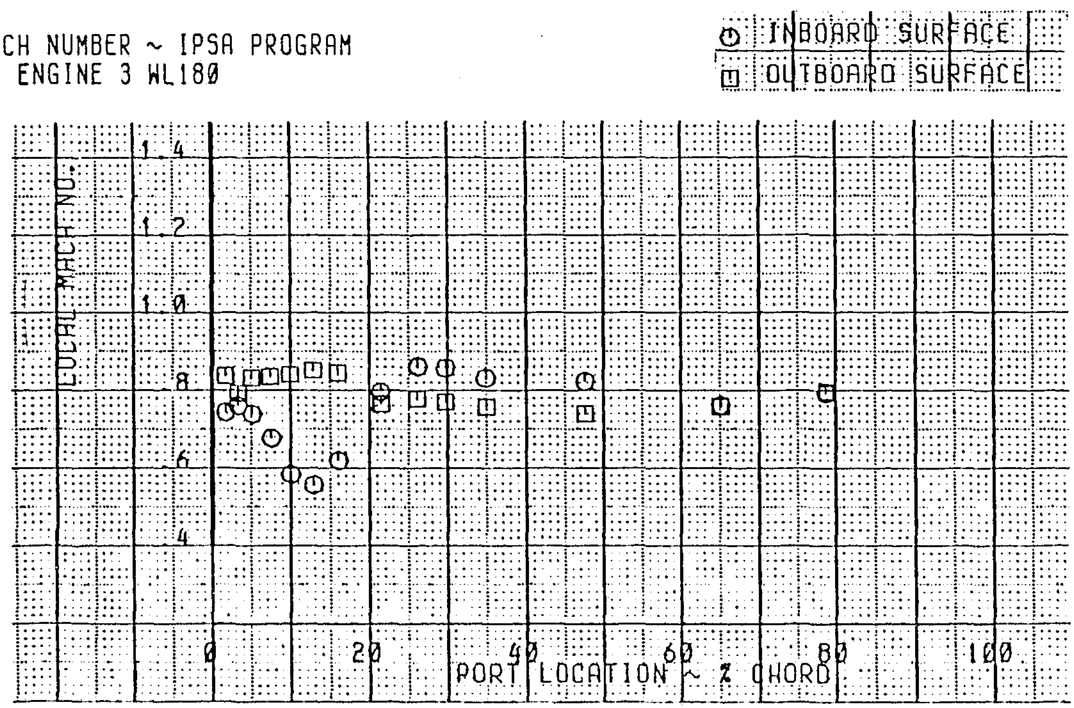
Figure B-16. Local Mach Number Plots (Test 273-12, Condition 1.00.137.003)

125209-48-364

• LOCAL MACH NUMBER ~ IPSA PROGRAM
WBL510



• LOCAL MACH NUMBER ~ IPSA PROGRAM
ENGINE 3 WL180

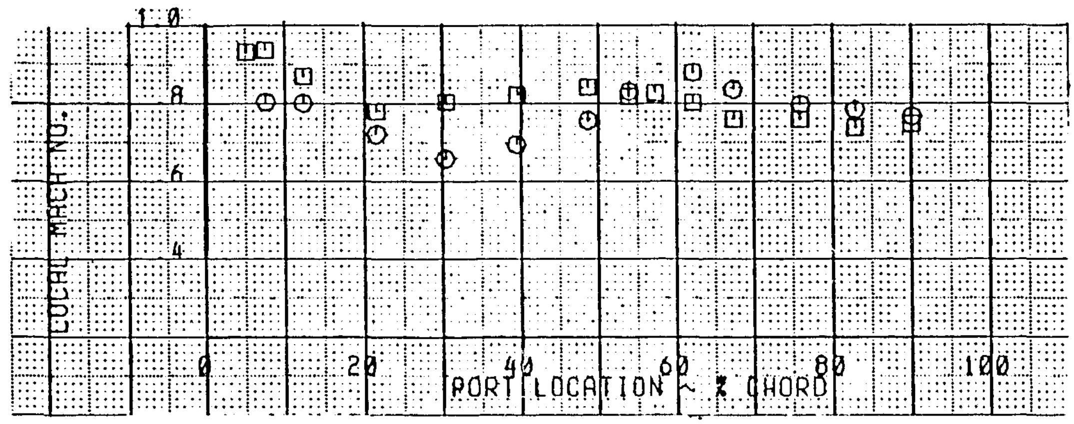


H_p	=	12 002m (39 376 ft)	M	=	0.800
GW	=	218 881 kg (482 550 lbm)	α	=	2.9 deg
Q	=	8.660 kPa (1.256 PSI)	FLAPS	=	0 deg
V_c	=	455.2 km/h (245.8 KTS)	LANDING GEAR UP		

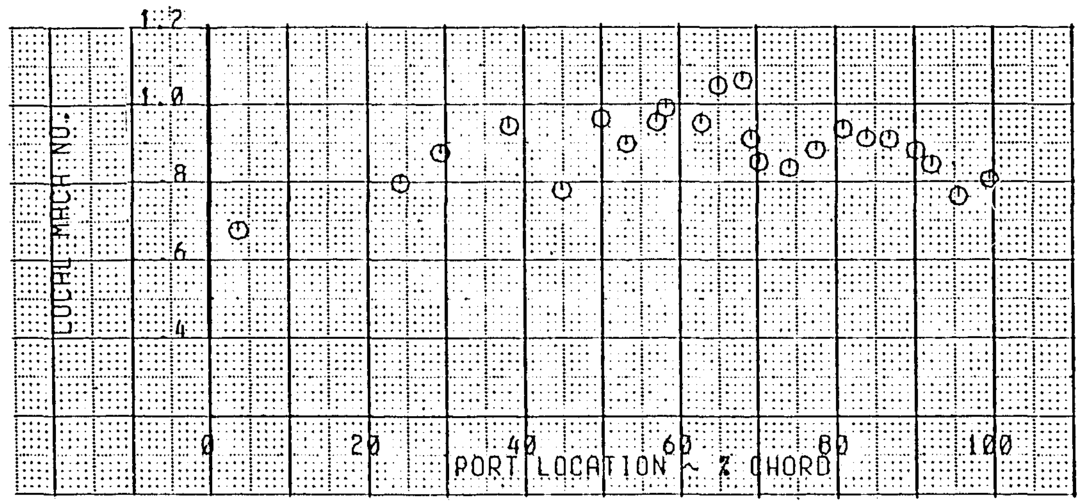
125209-48-365

Figure B-16. Local Mach Number Plots (Test 273-12, Condition 1.00.137.003) (Continued)

● LOCAL MACH NUMBER ~ IPSA PROGRAM
ENGINE 3 WL155



● LOCAL MACH NUMBER ~ IPSA PROGRAM
ENGINE 3 CORE 030 DEG

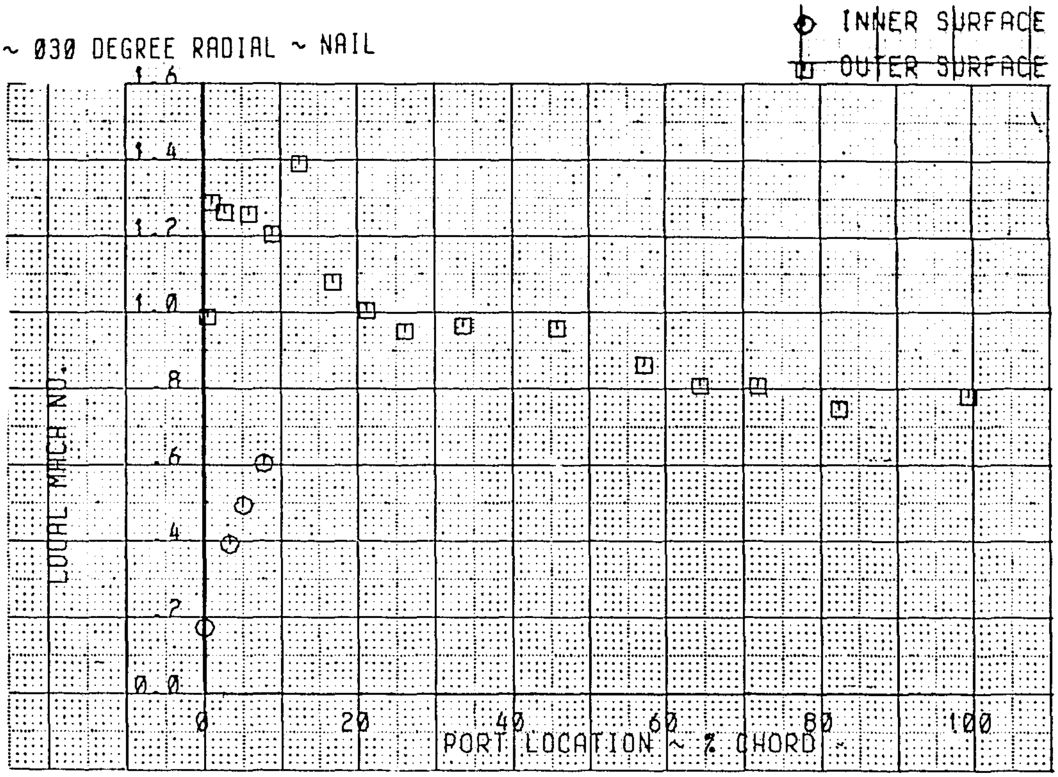


H_p	=	12 002m (39 376 ft)	M	=	0.800
GW	=	218 881 kg (482 550 lbm)	α	=	2.9 deg
Q	=	8.660 kPa (1.256 PSI)	FLAPS = 0 deg		
V_c	=	455.2 km/h (245.8 KTS)	LANDING GEAR UP		

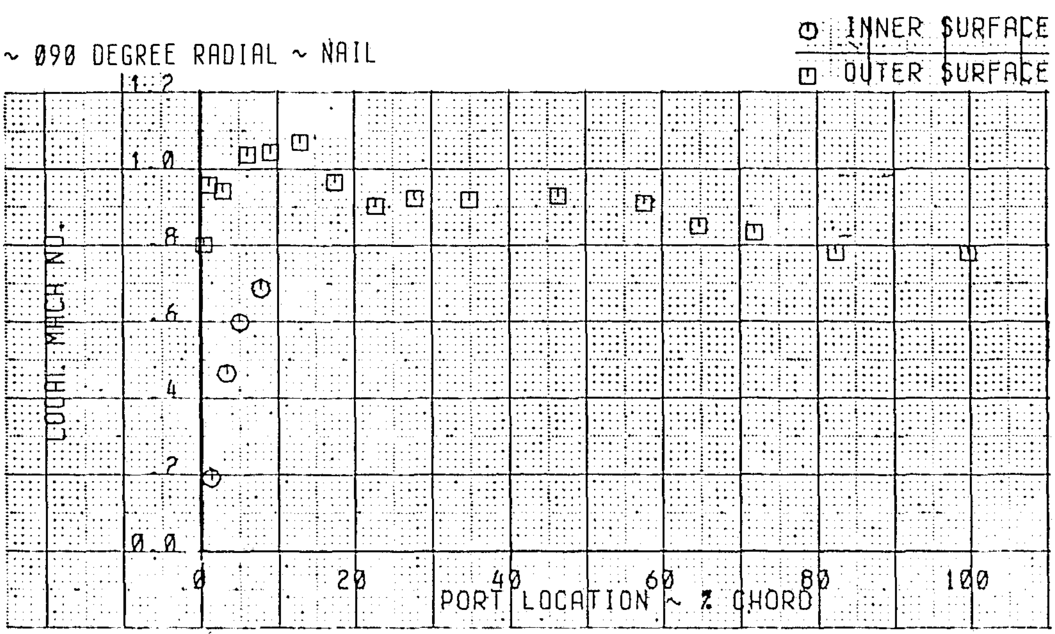
125209-366

Figure B-16. Local Mach Number Plots (Test 273-12, Condition 1.00.137.003)(Continued)

● ENGINE 3 ~ 030 DEGREE RADIAL ~ NAIL



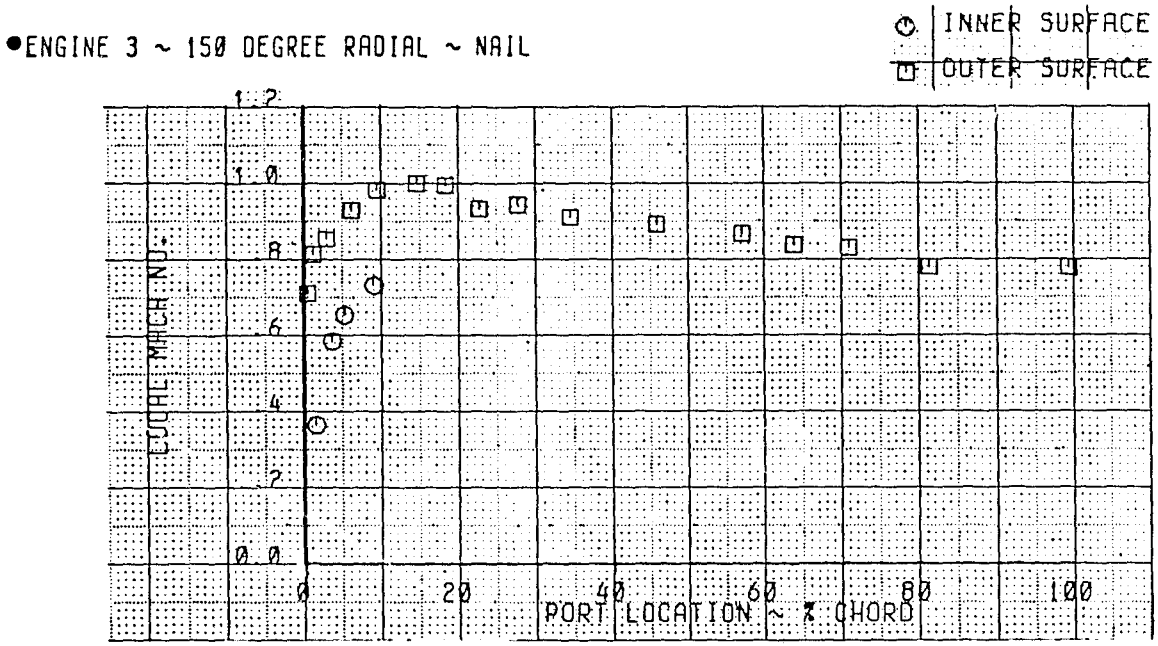
● ENGINE 3 ~ 090 DEGREE RADIAL ~ NAIL

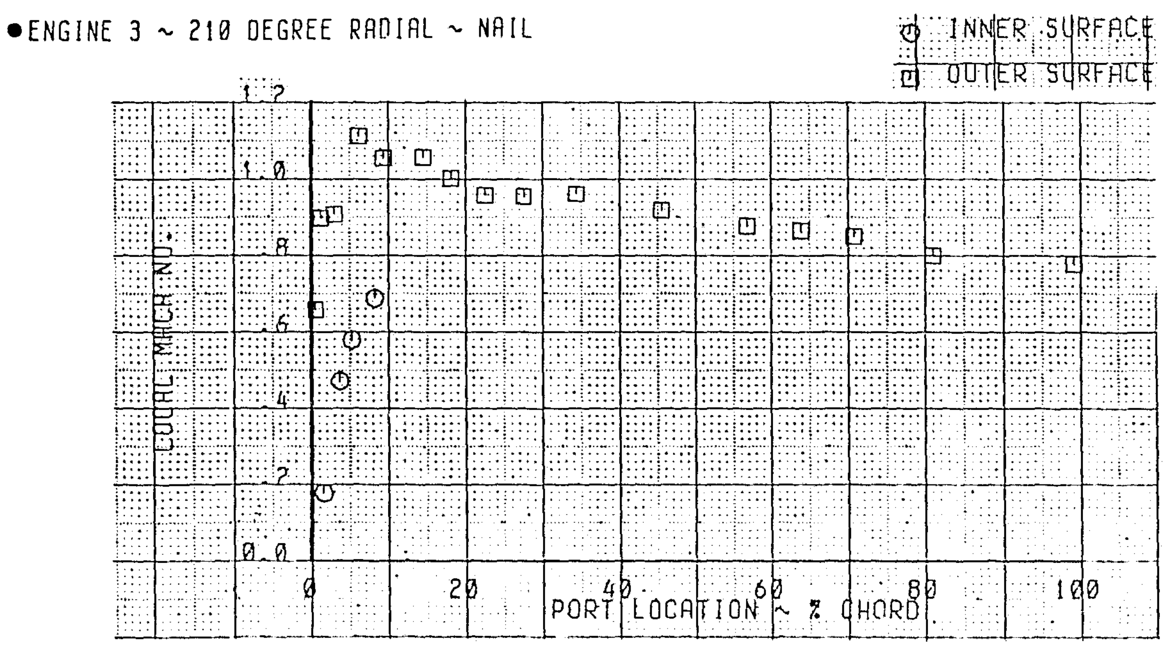


H_P	=	12 002m (39 376 ft)	M	=	0.800
GW	=	218 881 kg (482 550 lbm)	α	=	2.9 deg
Q	=	8 660 kPa (1.256 PSI)	FLAPS = 0 deg		
V_c	=	455.2 km/h (245.8 KTS)	LANDING GEAR UP		

125209-367

Figure B-16. Local Mach Number Plots (Test 273-12, Condition 1.00.137.003)(Continued)

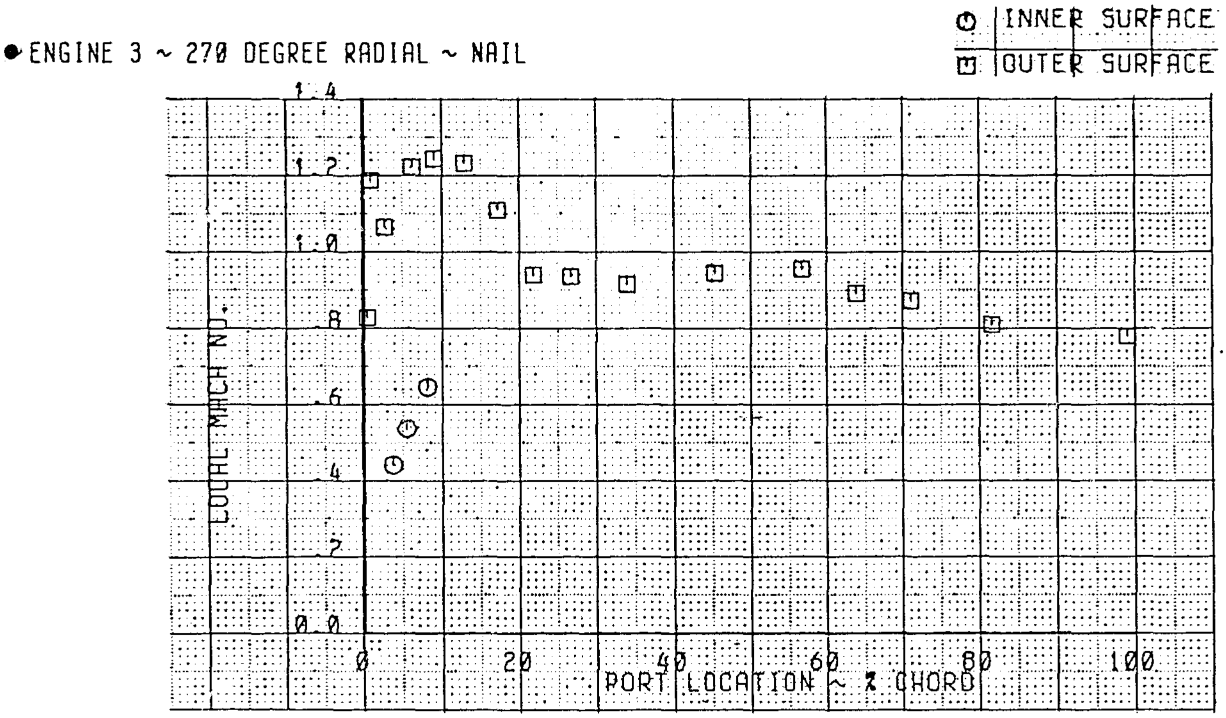


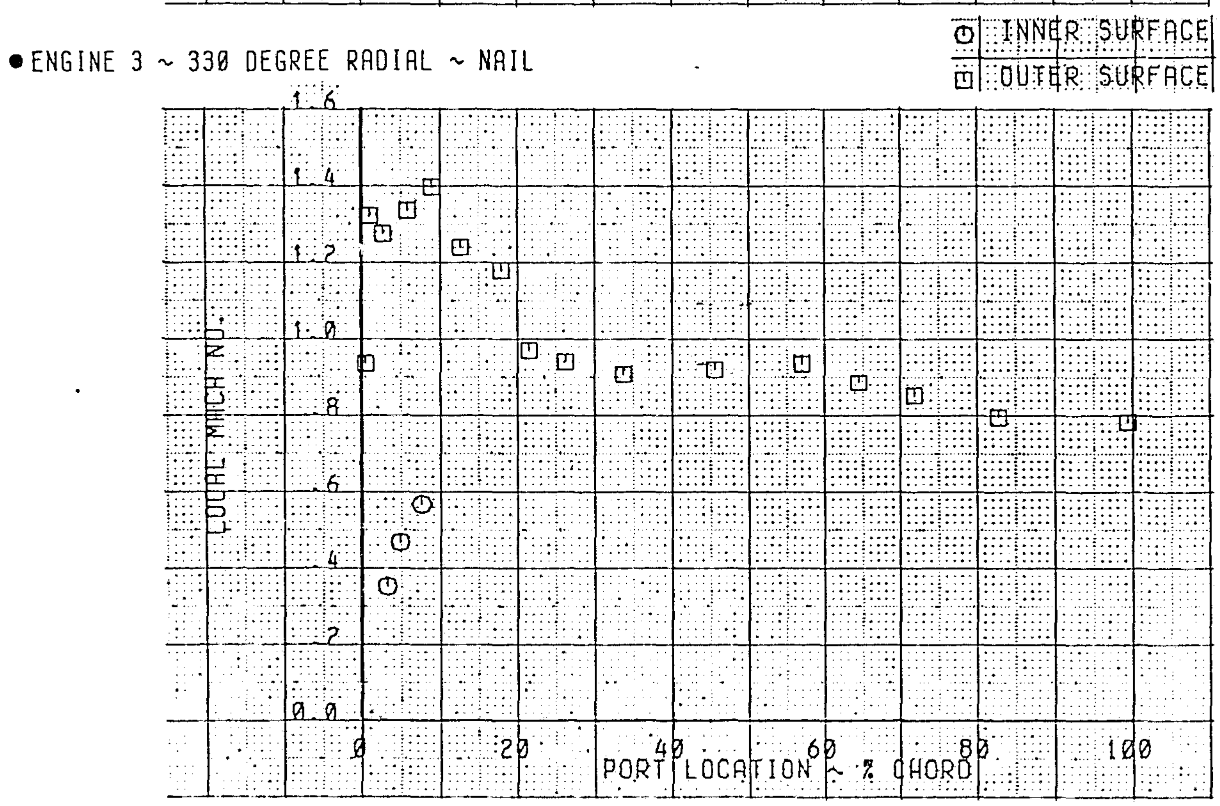


H_P	= 12 002m (39 376 ft)	M	= 0.800
GW	= 218 881 kg (482 550 lbm)	α	= 2.9 deg
Q	= 8.660 kPa (1.256 PSI)	FLAPS = 0 deg	
V_c	= 455.2 km/h (245.8 KTS)	LANDING GEAR UP	

125209-368

Figure B-16. Local Mach Number Plots (Test 273-12, Condition 1.00.137.003)(Continued)





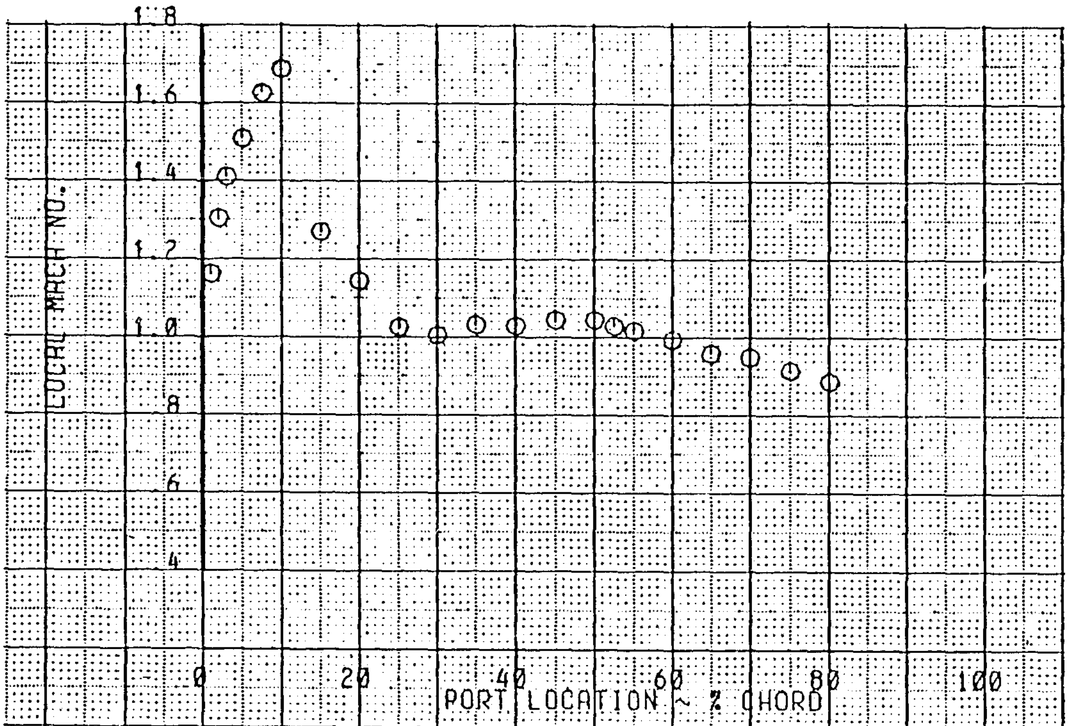
H_p	=	12 002m (39 376 ft)	M	=	0.800
GW	=	218 881 kg (482 550 lbm)	α	=	2.9 deg
Q	=	8.660 kPa (1.256 PSI)	FLAPS = 0 deg		
V_c	=	455.2 km/h (245.8 KTS)	LANDING GEAR UP		

125209-369

Figure B-16. Local Mach Number Plots (Test 273-12, Condition 1.00.137.003)(Continued)

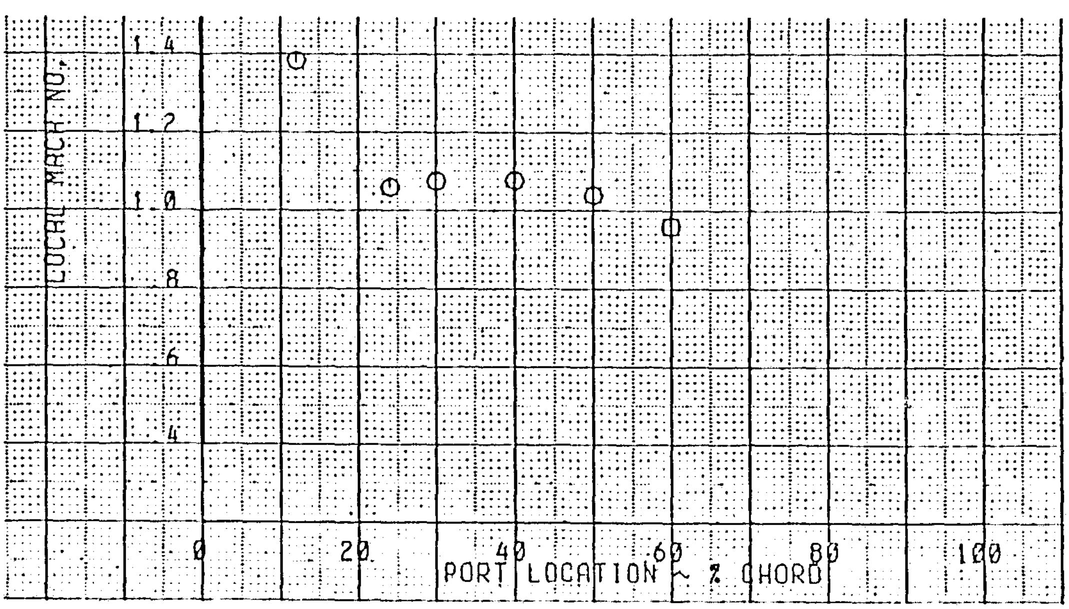
● LOCAL MACH NUMBER ~ IPSA PROGRAM
WBL809

UPPER SURFACE



● LOCAL MACH NUMBER ~ IPSA PROGRAM
WBL834

UPPER SURFACE

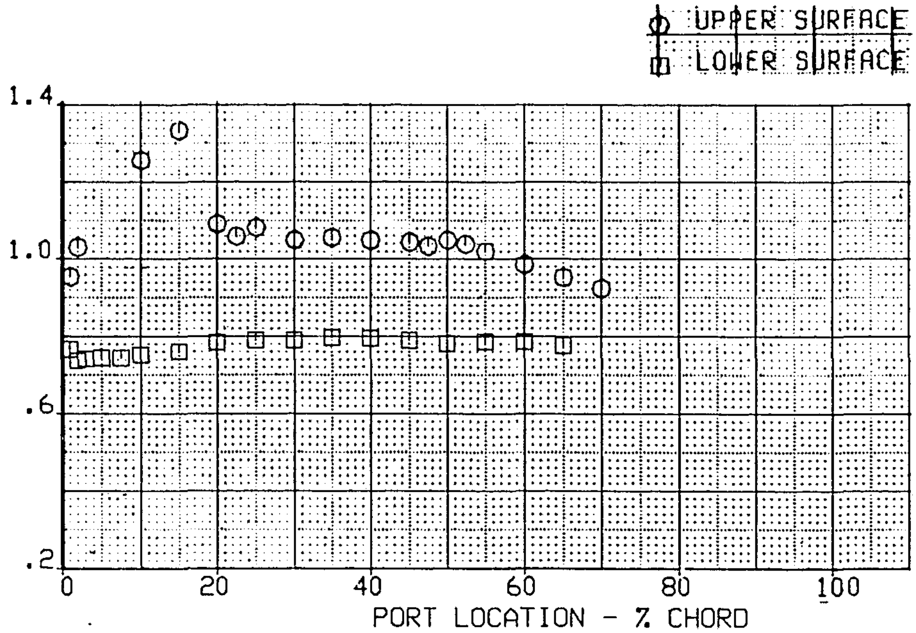


H_p	= 12 002m (39 376 ft)	M	= 0.800
GW	= 218 881 kg (482 550 lbm)	α	= 2.9 deg
Q	= 8.660 kPa (1.256 PSI)	FLAPS = 0 deg	
V_c	= 455.2 km/h (245.8 KTS)	LANDING GEAR UP	

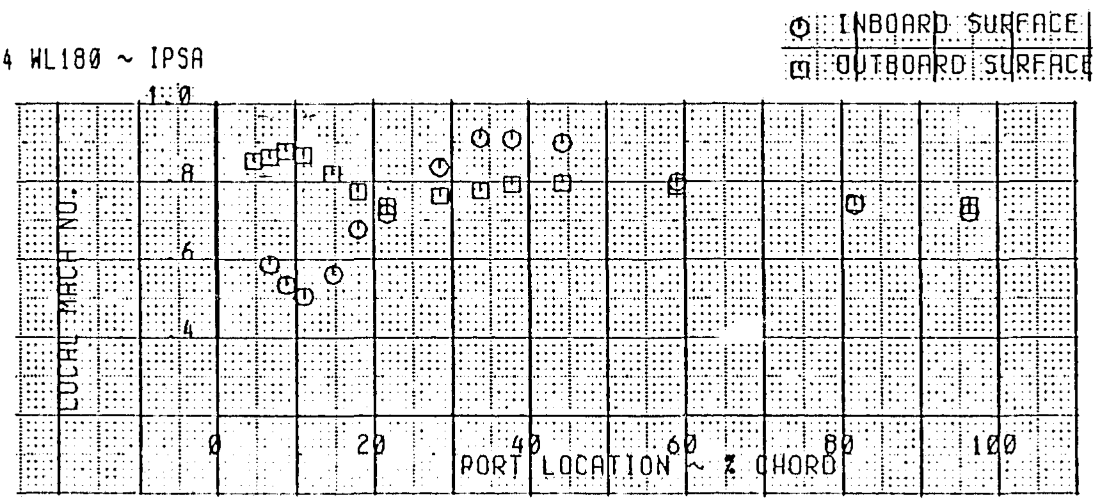
125209-370

Figure B-16. Local Mach Number Plots (Test 273-12, Condition 1.00.137.003) (Continued)

● WBL870 ~ IPSA



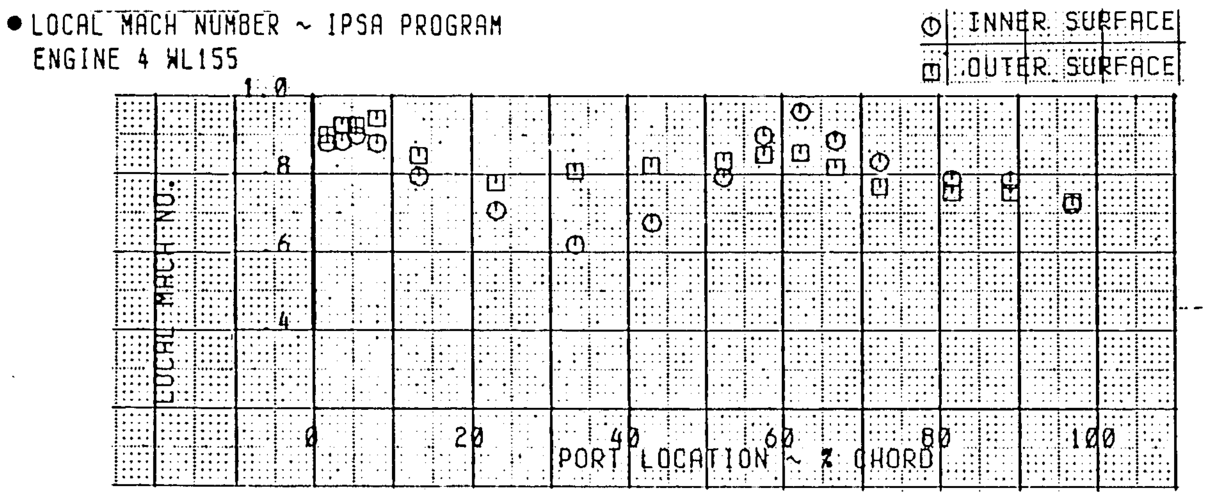
● ENGINE 4 WL180 ~ IPSA

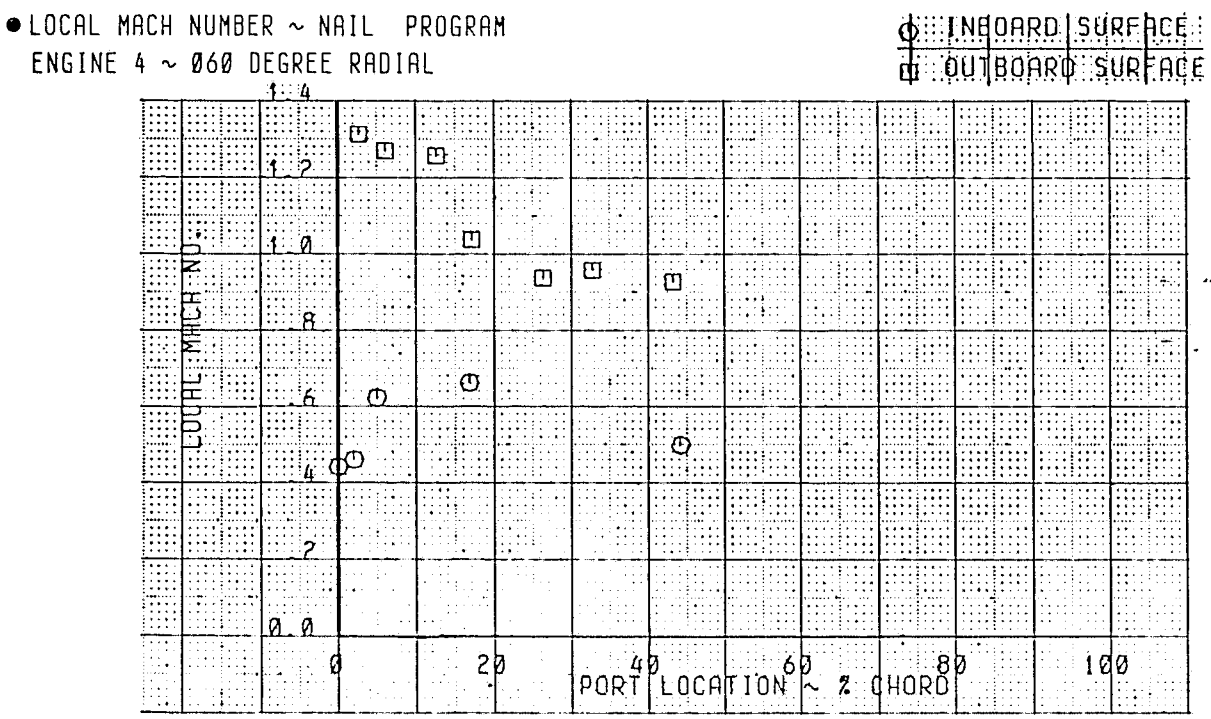


H_p	=	12 002m (39 376 ft)	M	=	0.800
GW	=	218 881 kg (482 550 lbm)	α	=	2.9 deg
Q	=	8.660 kPa (1.256 PSI)	FLAPS	=	0 deg
V_c	=	455.2 km/h (245.8 KTS)	LANDING GEAR UP		

125209-371

Figure B-16. Local Mach Number Plots (Test 273-12, Condition 1.00.137.003)(Continued)

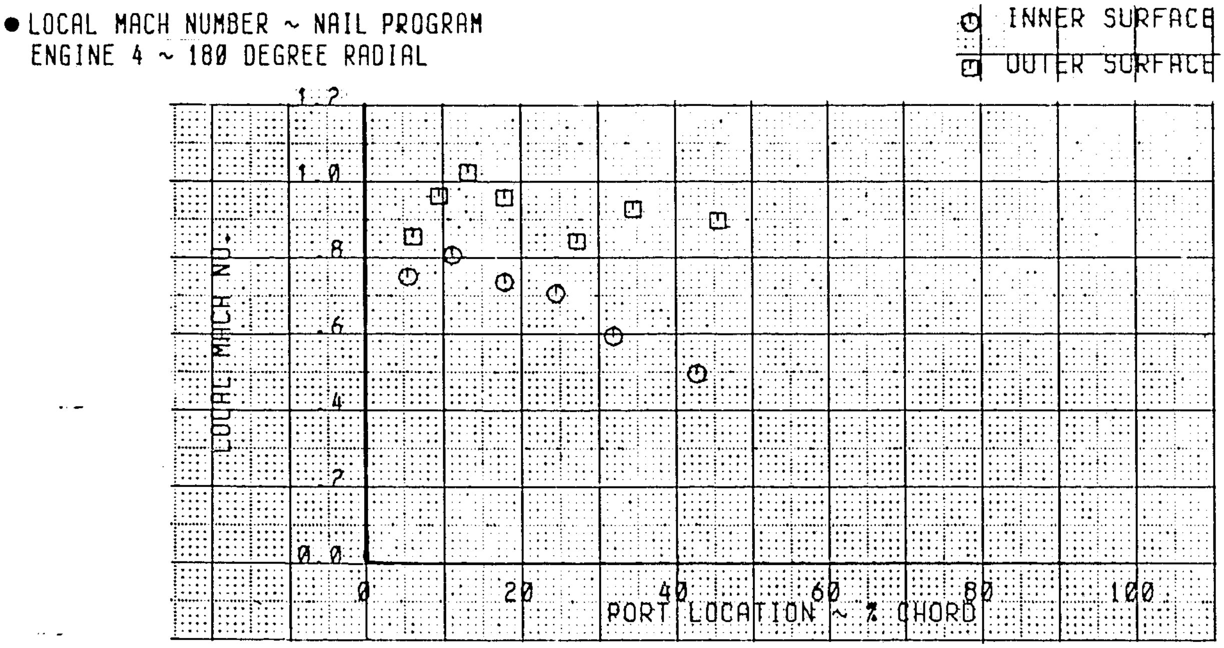


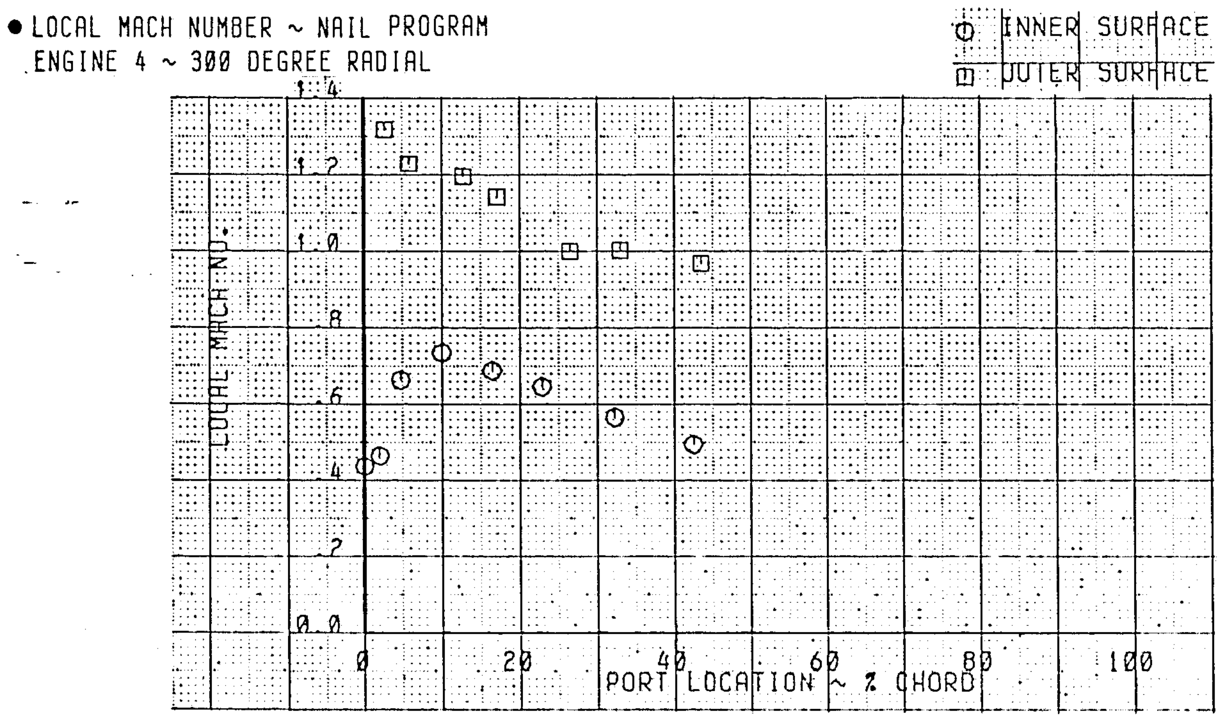


H_p	=	12 002m (39 376 ft)	M	=	0.800
GW	=	218 881 kg (482 550 lbm)	α	=	2.9 deg
Q	=	8.660 kPa (1.256 PSI)	FLAPS	=	0 deg
V_c	=	455.2 km/h (245.8 KTS)	LANDING GEAR UP		

125209-372

Figure B-16. Local Mach Number Plots (Test 273-12, Condition 1.00.137.003)(Continued)

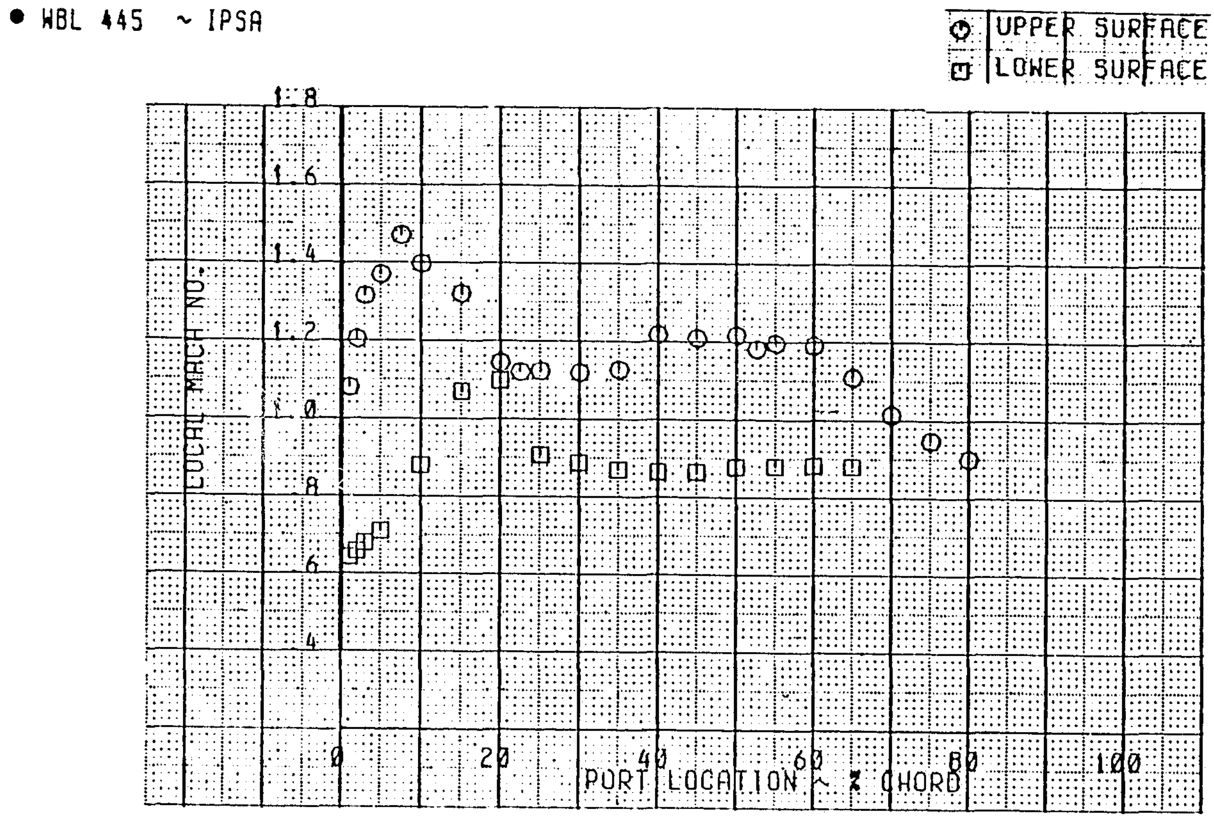


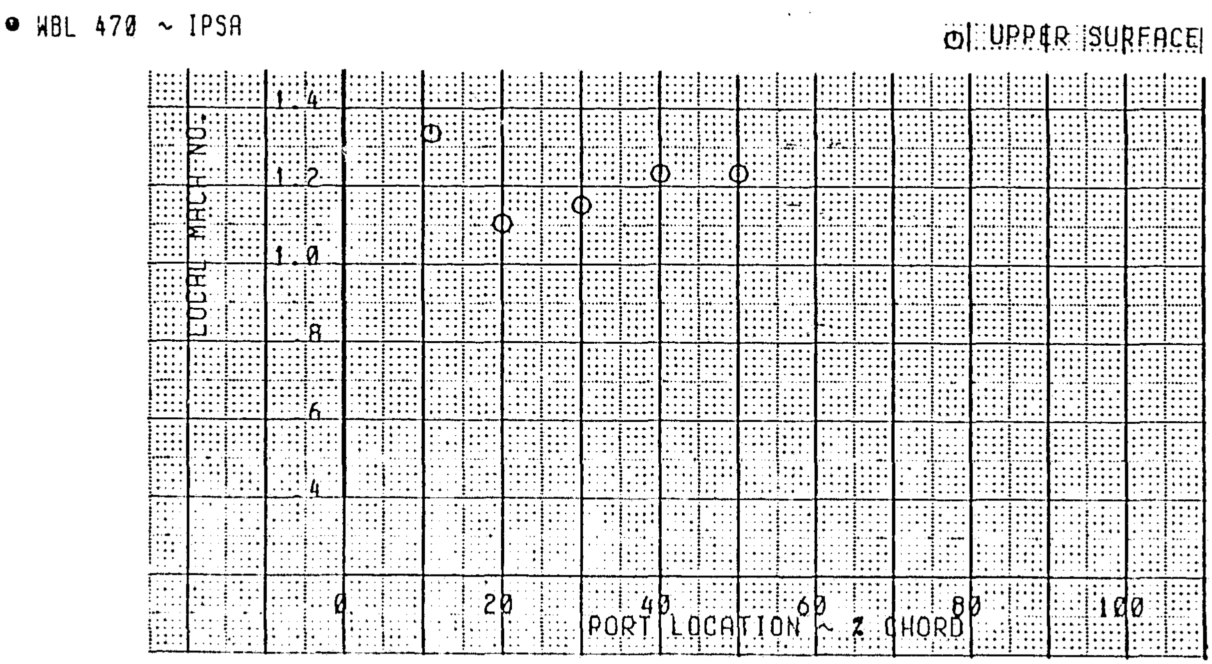


H_p	=	12 002m (39 376 ft)	M	=	0.800
GW	=	218 881 kg (482 550 lbm)	α	=	2.9 deg
Q	=	8.660 kPa (1.256 PSI)	FLAPS	=	0 deg
V_c	=	455.2 km/h (245.8 KTS)	LANDING GEAR UP		

125209 373

Figure B-16. Local Mach Number Plots (Test 273-12, Condition 1.00.137.003) (Concluded)



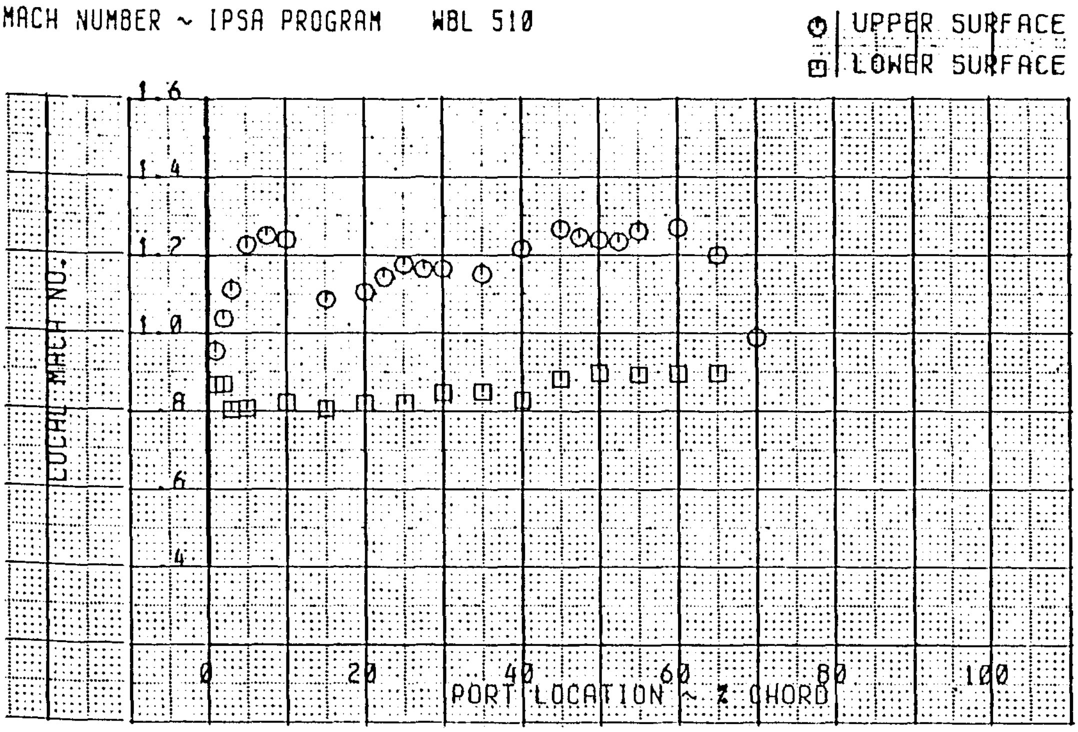


H_p	=	11 591m (38 028 ft)	M	=	0.855
GW	=	216 946 kg (478 283 lbm)	α	=	1.7 deg
Q	=	10.556 kPa (1.531 PSI)	FLAPS = 0 deg		
V_c	=	506.2 km/h (273.3 KTS)	LANDING GEAR UP		

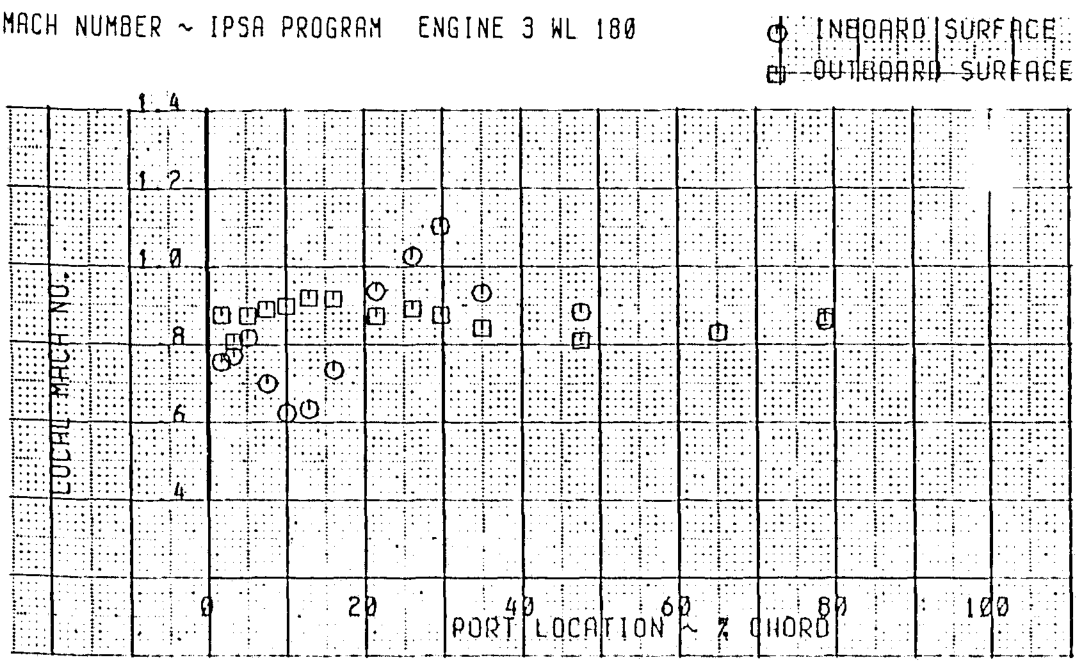
125209-374

Figure B-17. Local Mach Number Plots (Test 273-15, Condition 1.00.137.001)

●LOCAL MACH NUMBER ~ IPSA PROGRAM WBL 510



● LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 3 WL 180

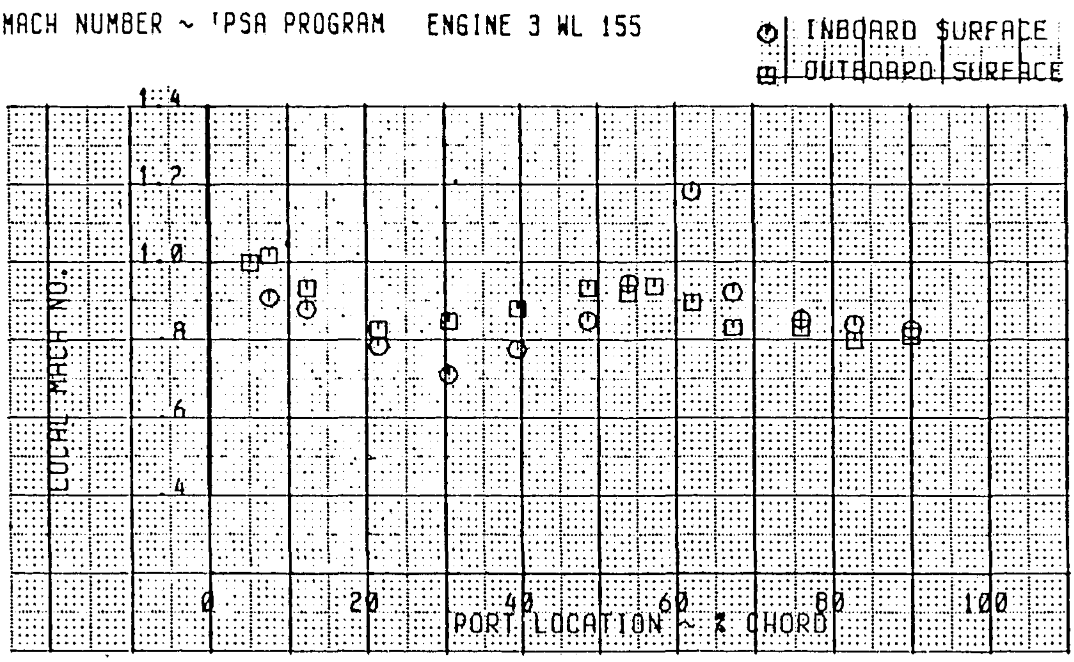


H_p	=	11 591m (38 028 ft)	M	=	0.855
GW	=	216 946 kg (478 283 lbm)	α	=	1.7 deg
Q	=	10 556 kPa (1.531 PSI)	FLAPS = 0 deg		
V_c	=	506.2 km/h (273.3 KTS)	LANDING GEAR UP		

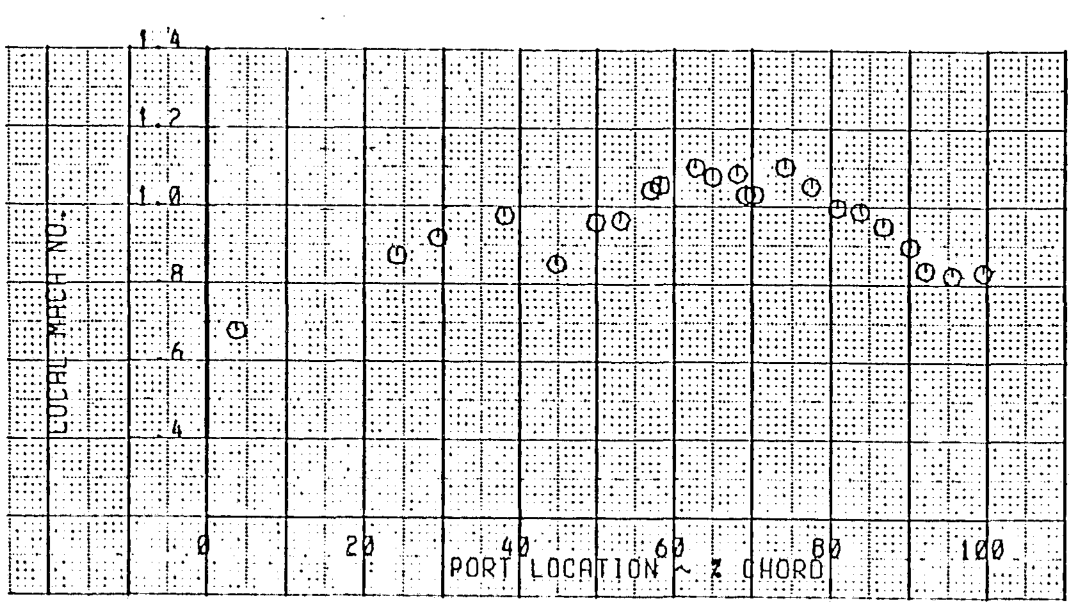
125209-375

Figure B-17. Local Mach Number Plots (Test 273-15, Condition 1.00.137.001)(Continued)

● LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 3 WL 155



● LOCAL MACH NUMBER ~ IPSA PROGRAM
ENGINE 3 CORE 030 DEG



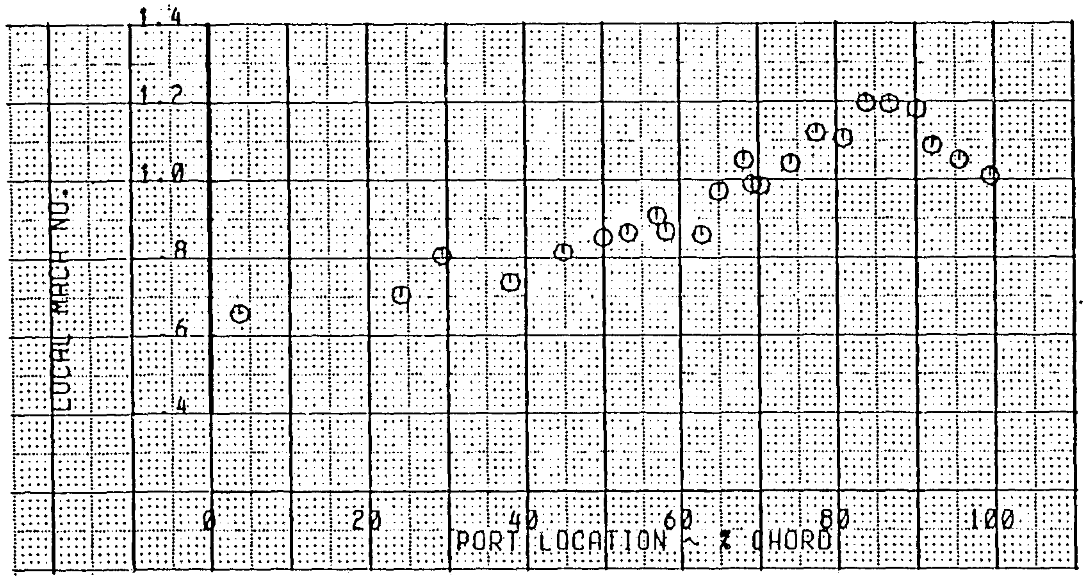
H_p = 11 591m (38 028 ft)		M = 0.855	
GW = 216 946 kg (478 283 lbm)		α = 1.7 deg	
Q = 10.556 kPa (1.531 PSI)		FLAPS = 0 deg	
V_c = 506.2 km/h (273.3 KTS)		LANDING GEAR UP	

125209-376

Figure B-17. Local Mach Number Plots (Test 273-15, Condition 1.00.137.001)(Continued)

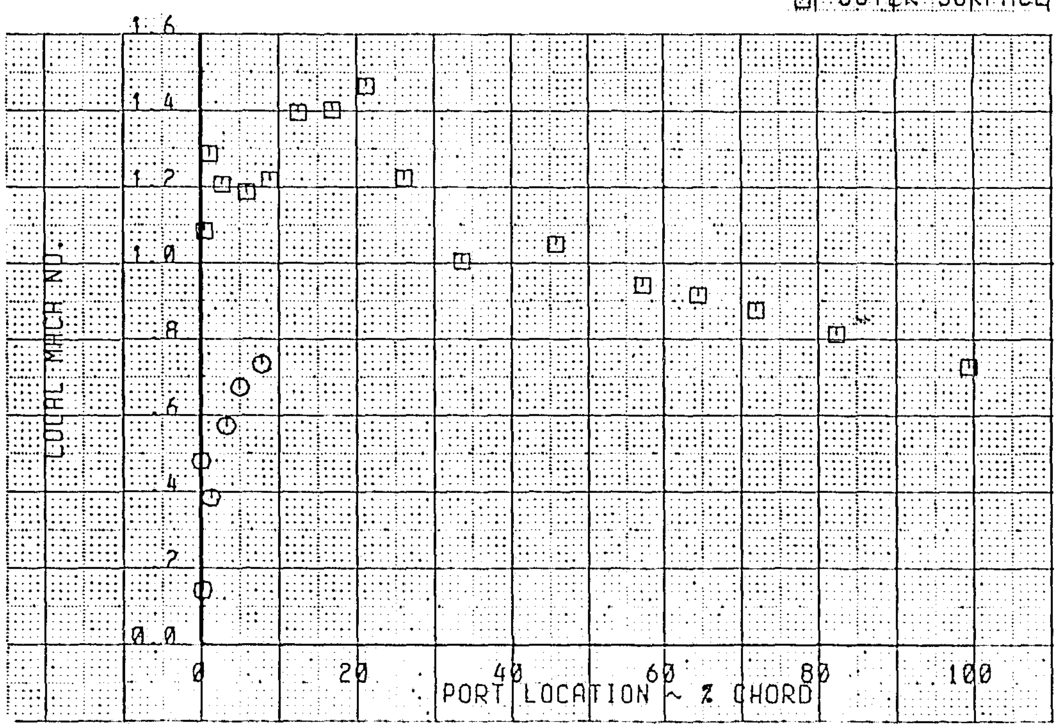
● LOCAL MACH NUMBER ~ IPSA PROGRAM
ENGINE 3 CORE 330 DEG

ϕ INBOARD SURFACE



● LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 3 ~ 030 DEGREE RADIAL

ϕ INNER SURFACE
⌗ OUTER SURFACE

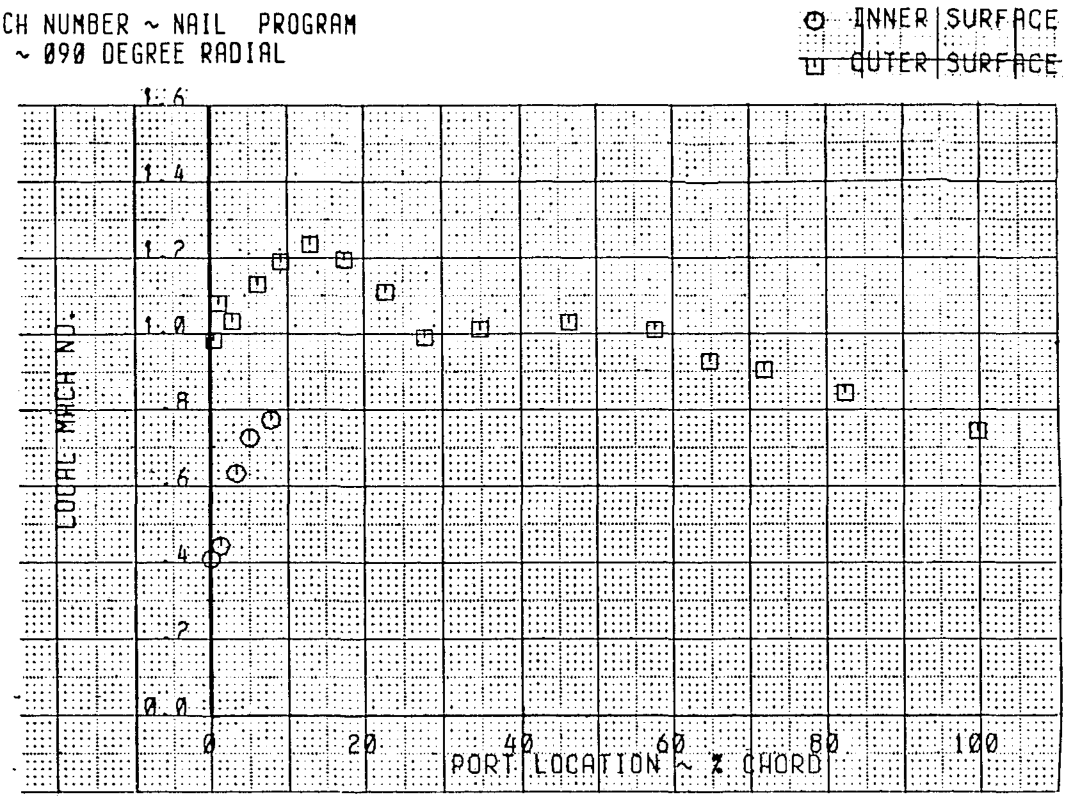


H_p	= 11 591m (38 028 ft)	M	= 0.855
GW	= 216 946 kg (478 283 lbm)	α	= 1.7 deg
Q	= 10.556 kPa (1.531 PSI)	FLAPS = 0 deg	
V_c	= 506.2 km/h (273.3 KTS)	LANDING GEAR UP	

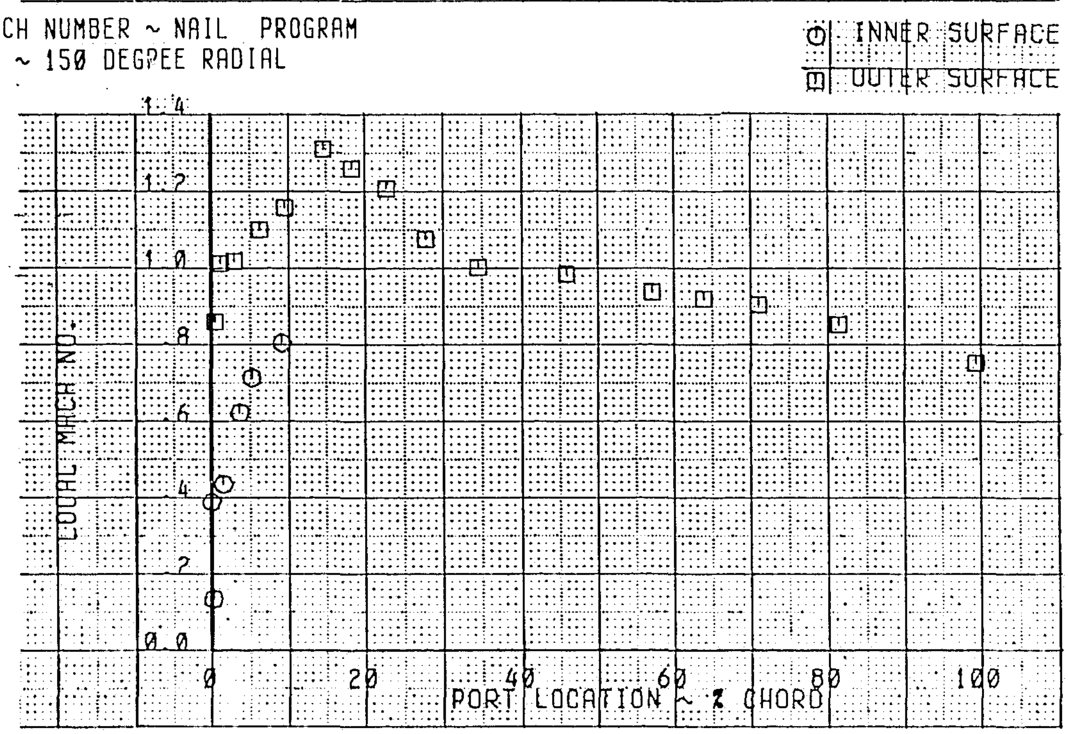
125209-377

Figure B-17. Local Mach Number Plots (Test 273-15, Condition 1.00.137.001)(Continued)

● LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 3 ~ 090 DEGREE RADIAL



● LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 3 ~ 150 DEGREE RADIAL

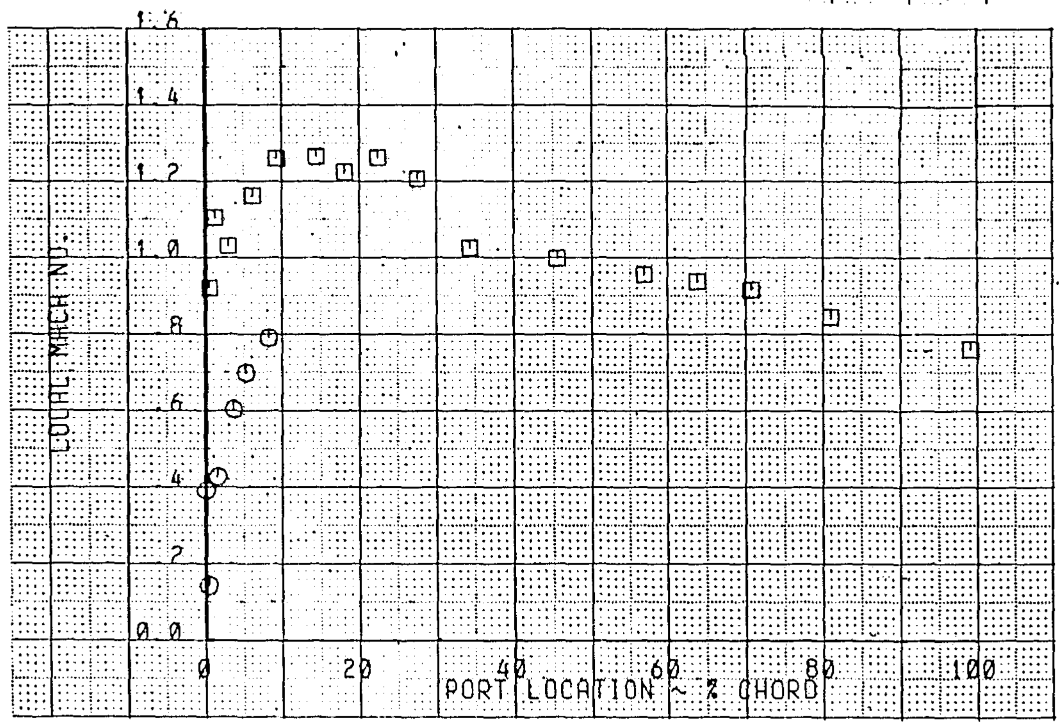


H_p	=	12 478m (40 938 ft)	M	=	0.767
GW	=	199 759 kg (440 393 lbm)	α	=	3.3 deg
Q	=	7.384 kPa (1.071 PSI)	FLAPS = 0 deg		
V_c	=	418.7 km/h (226.1 KTS)	LANDING GEAR UP		

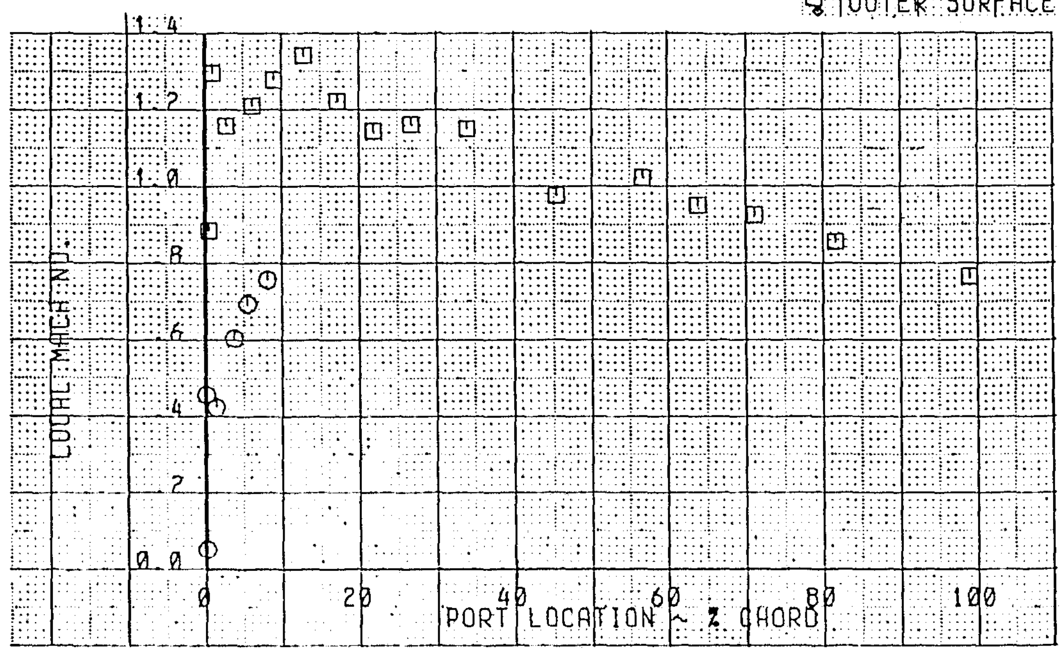
125209-378

Figure B-17. Local Mach Number Plots (Test 273-15, Condition 1.00.137.001)(Continued)

● LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 3 ~ 210 DEGREE RADIAL



● LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 3 ~ 270 DEGREE RADIAL

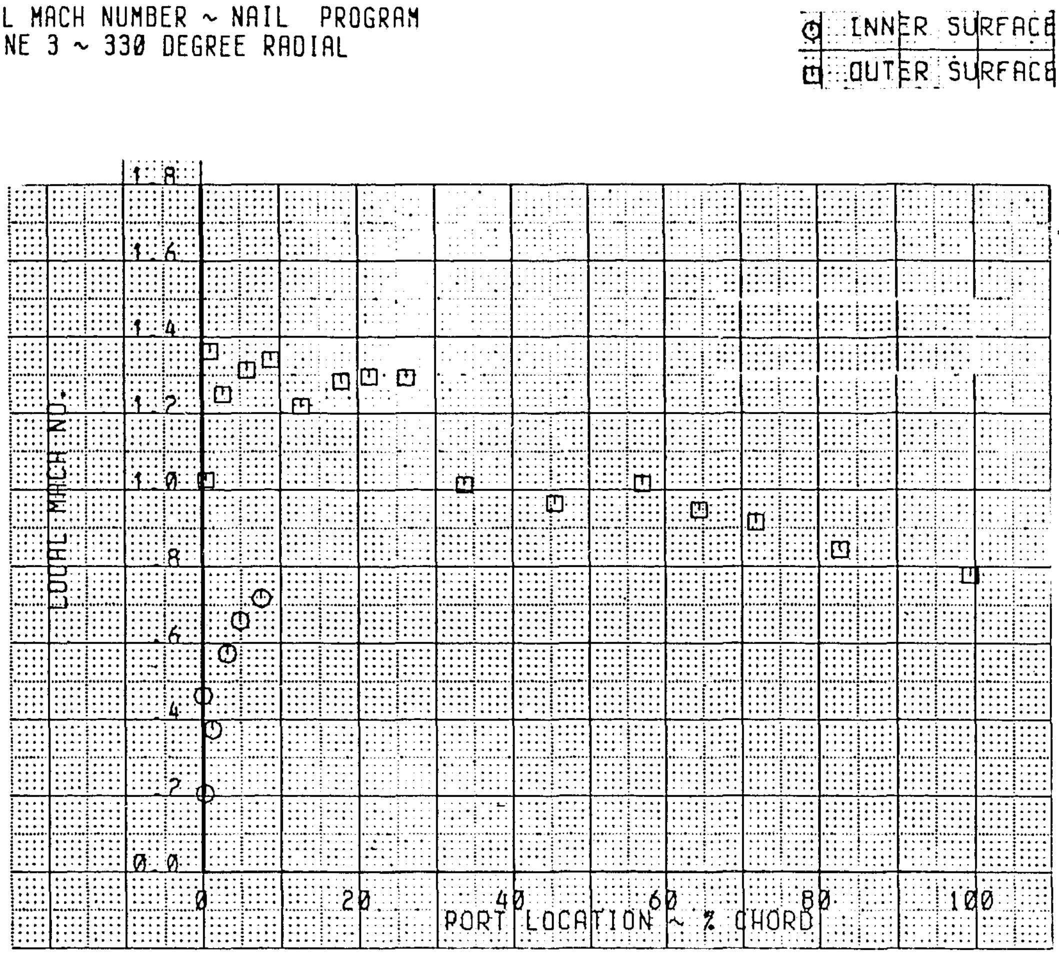


H_p	=	11 591m (38 028 ft)	M	=	0.855
GW	=	216 946 kg (478 283 lbm)	α	=	1.7 deg
Q	=	10.556 kPa (1.531 PSI)	FLAPS = 0 deg		
V_c	=	506 2 km/h (273.3 KTS)	LANDING GEAR UP		

125209-379

Figure B-17. Local Mach Number Plots (Test 273-15, Condition 1.00.137.001)(Continued)

● LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 3 ~ 330 DEGREE RADIAL

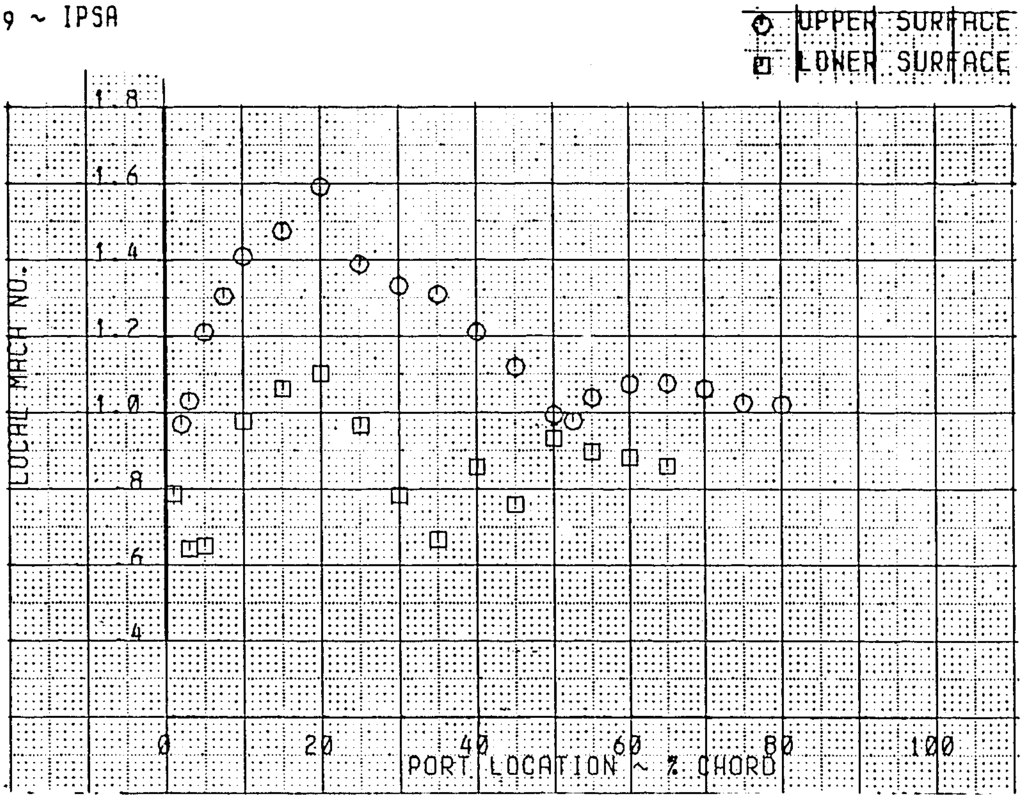


H_p	=	11 591m (38 028 ft)	M	=	0.855
GW	=	216 946 kg (478 283 lbm)	α	=	1.7 deg
Q	=	10.556 kPa (1.531 PSI)	FLAPS = 0 deg		
V_c	=	506 2 km/h (273.3 KTS)	LANDING GEAR UP		

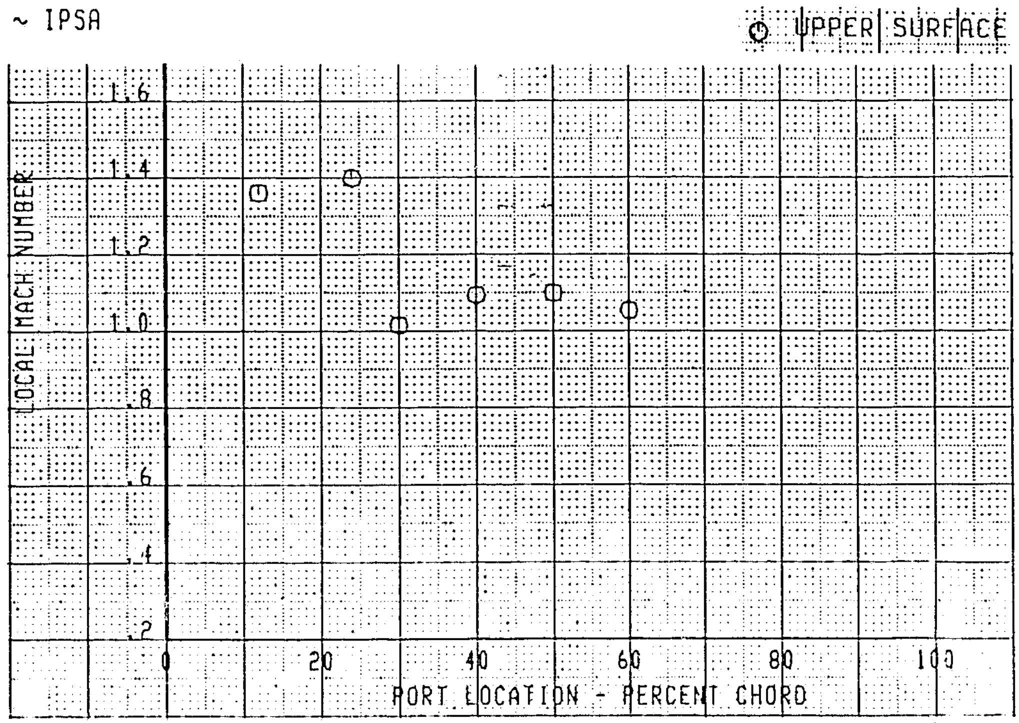
125209-380

Figure B-17. Local Mach Number Plots (Test 273-15, Condition 1.00.137.001)(Continued)

• WBL 809 ~ IPSA



• WBL 834 ~ IPSA

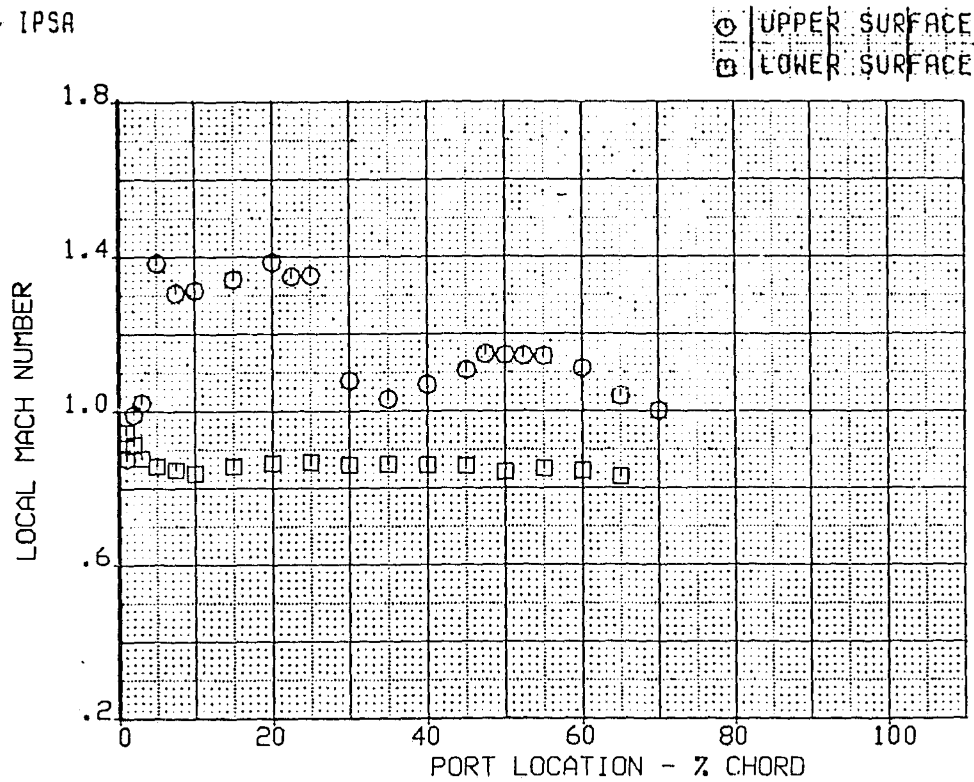


H_p	= 11 591m (38 028 ft)	M	= 0.855
GW	= 216 946 kg (478 283 lbm)	α	= 1.7 deg
Q	= 10.556 kPa (1.531 PSI)	FLAPS = 0 deg	
V_c	= 506.2 km/h (273.3 KTS)	LANDING GEAR UP	

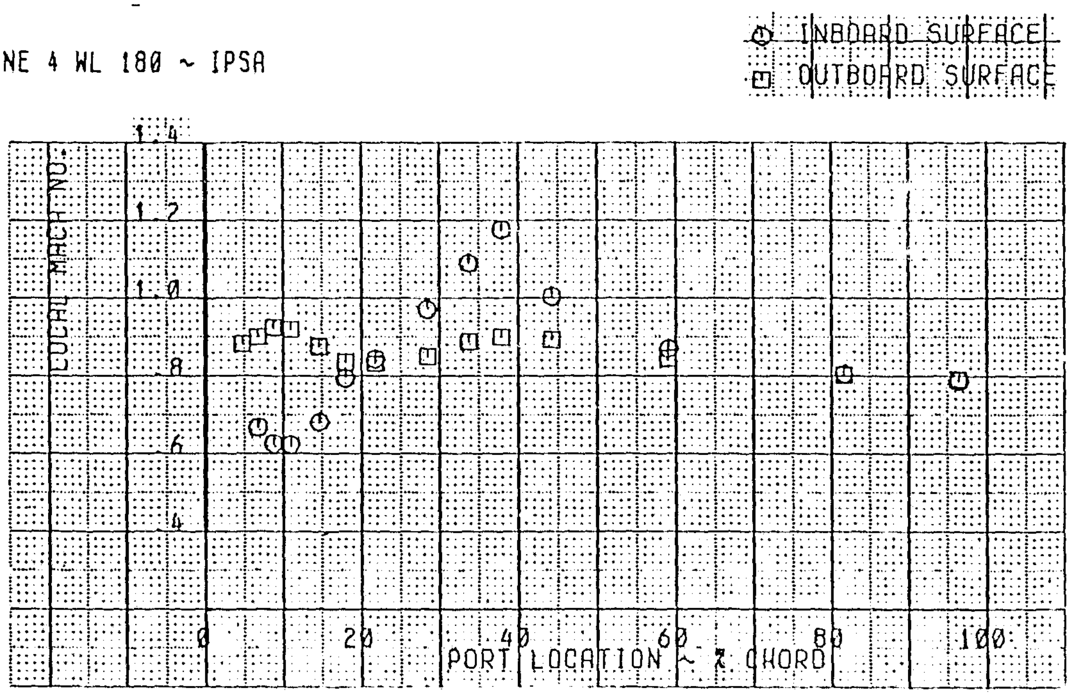
125209-381

Figure B-17. Local Mach Number Plots (Test 273-15, Condition 1.00.137.001)(Continued)

• WBL 870 ~ IPSA



• ENGINE 4 WL 180 ~ IPSA

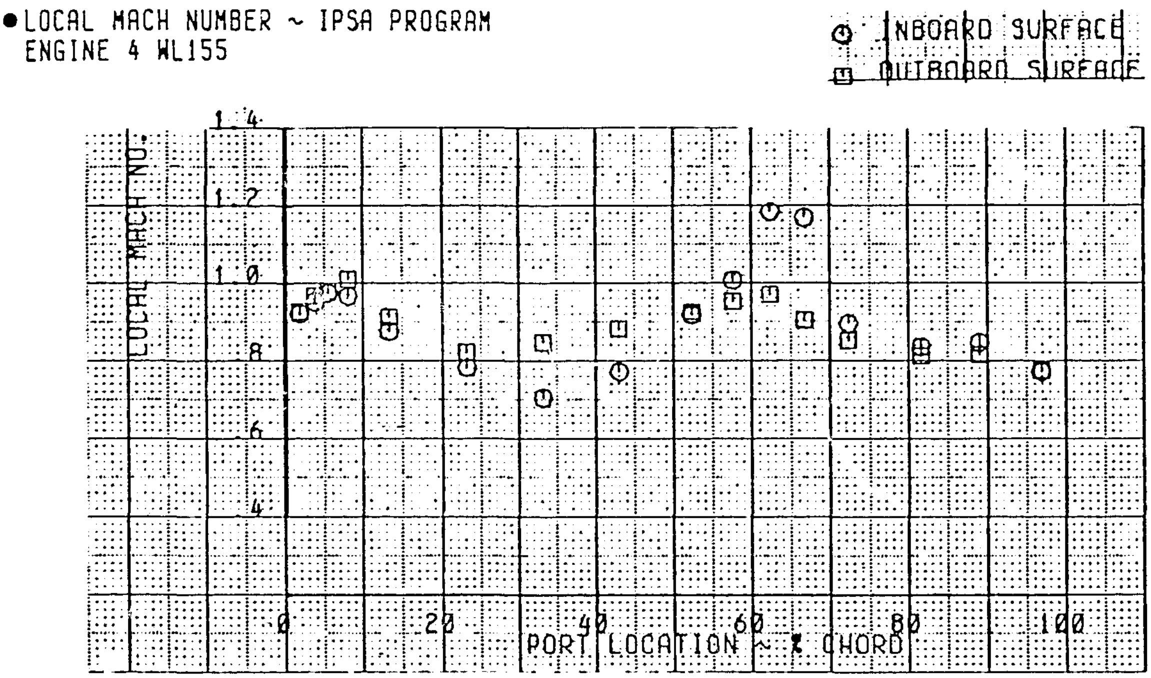


H_p	=	11 591m (38 028 ft)	M	=	0.855
GW	=	216 946 kg (478 283 lbm)	α	=	1.7 deg
Q	=	10.556 kPa (1.531 PSI)	FLAPS = 0 deg		
V_c	=	506.2 km/h (273.3 KTS)	LANDING GEAR UP		

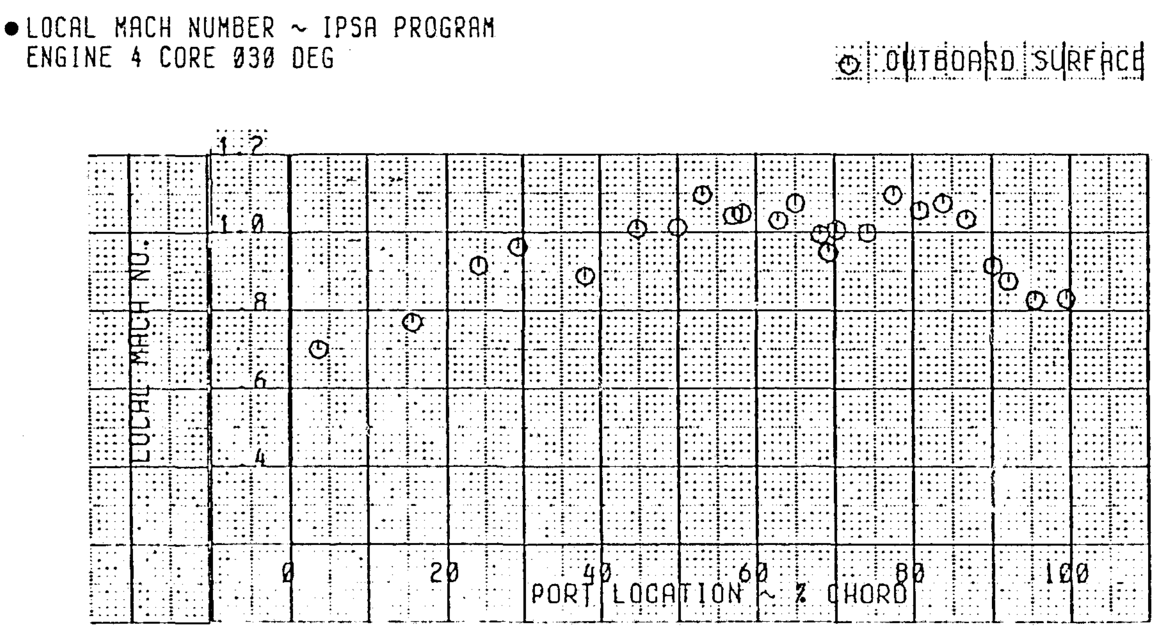
125209-382

Figure B-17. Local Mach Number Plots (Test 273-15, Condition 1.00.137.001)(Continued)

● LOCAL MACH NUMBER ~ IPSA PROGRAM
ENGINE 4 WL155



● LOCAL MACH NUMBER ~ IPSA PROGRAM
ENGINE 4 CORE 030 DEG

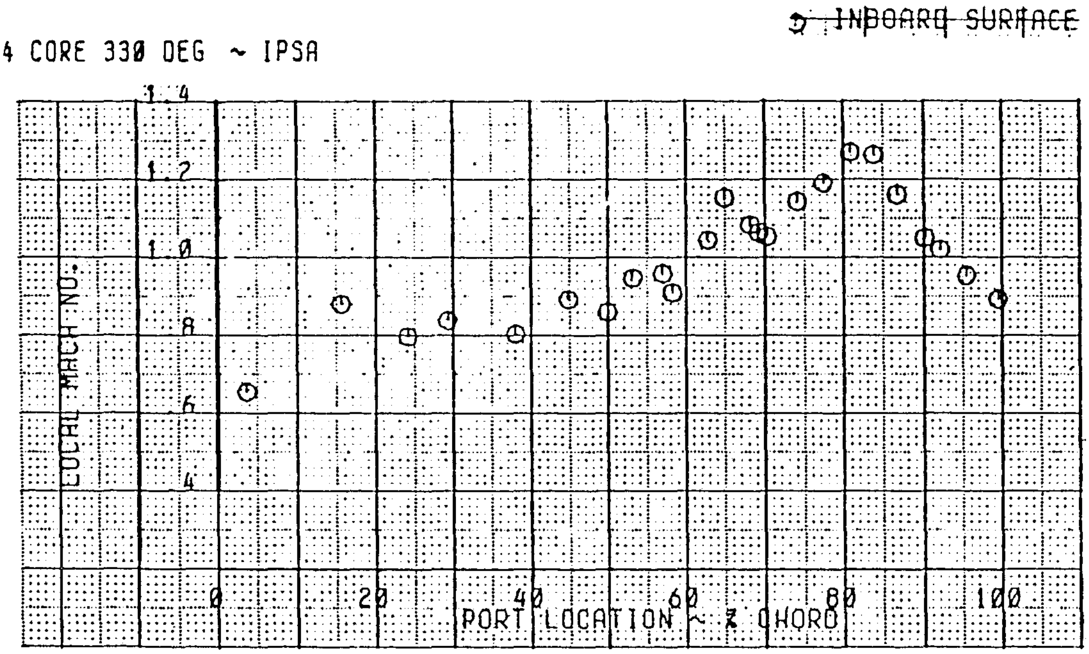


H_p	=	11 591m (38 028 ft)	M	=	0.855
GW	=	216 946 kg (478 283 lbm)	α	=	1.7 deg
Q	=	10.556 kPa (1.531 PSI)	FLAPS = 0 deg		
V_c	=	506.2 km/h (273.3 KTS)	LANDING GEAR UP		

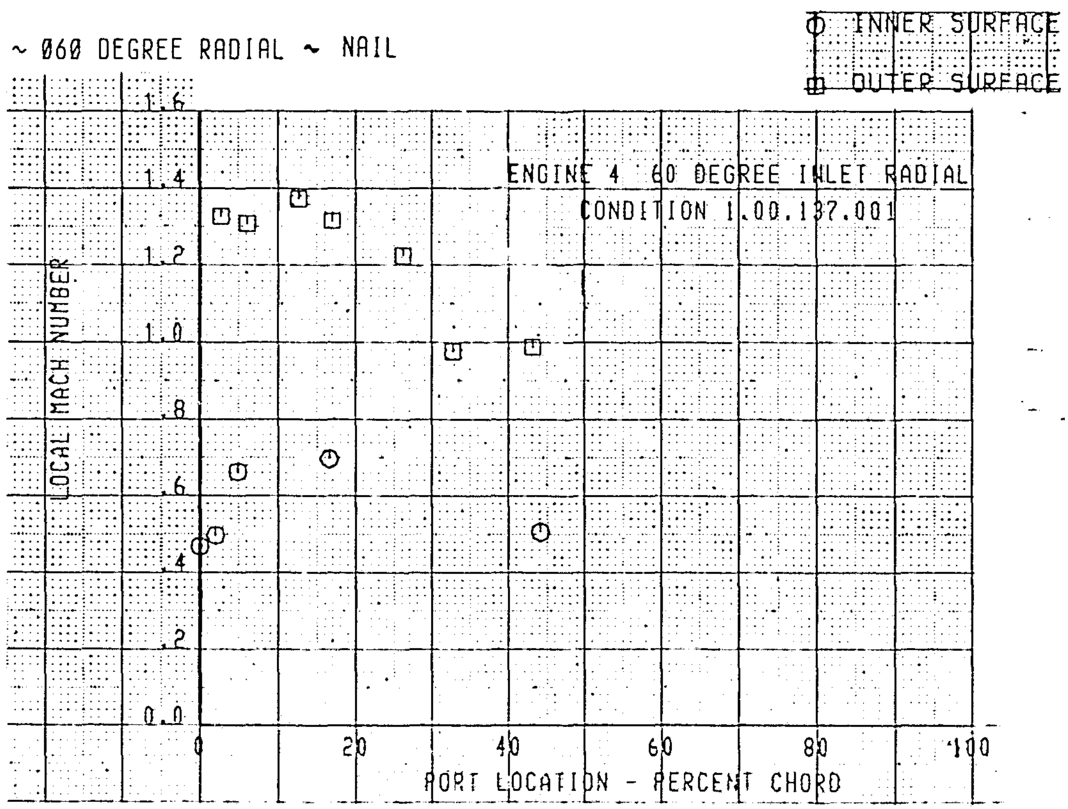
125209-383

Figure B-17. Local Mach Number Plots (Test 273-15, Condition 1.00.137.001)(Continued)

● ENGINE 4 CORE 330 DEG ~ IPSA



● ENGINE 4 ~ 060 DEGREE RADIAL ~ NAIL



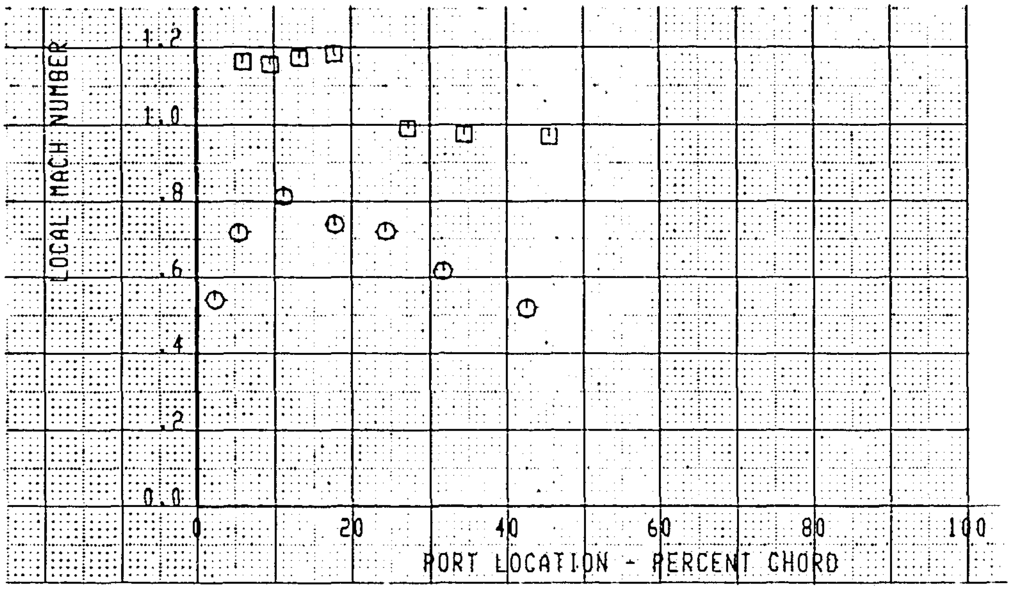
H_p	=	11 591m (38 028 ft)	M	=	0.855
GW	=	216 946 kg (478 283 lbm)	α	=	1.7 deg
Q	=	10.556 kPa (1.531 PSI)	FLAPS = 0 deg		
V_c	=	506.2 km/h (273.3 KTS)	LANDING GEAR UP		

125209-384

Figure B-17. Local Mach Number Plots (Test 273-15, Condition 1.00.137.001)(Continued)

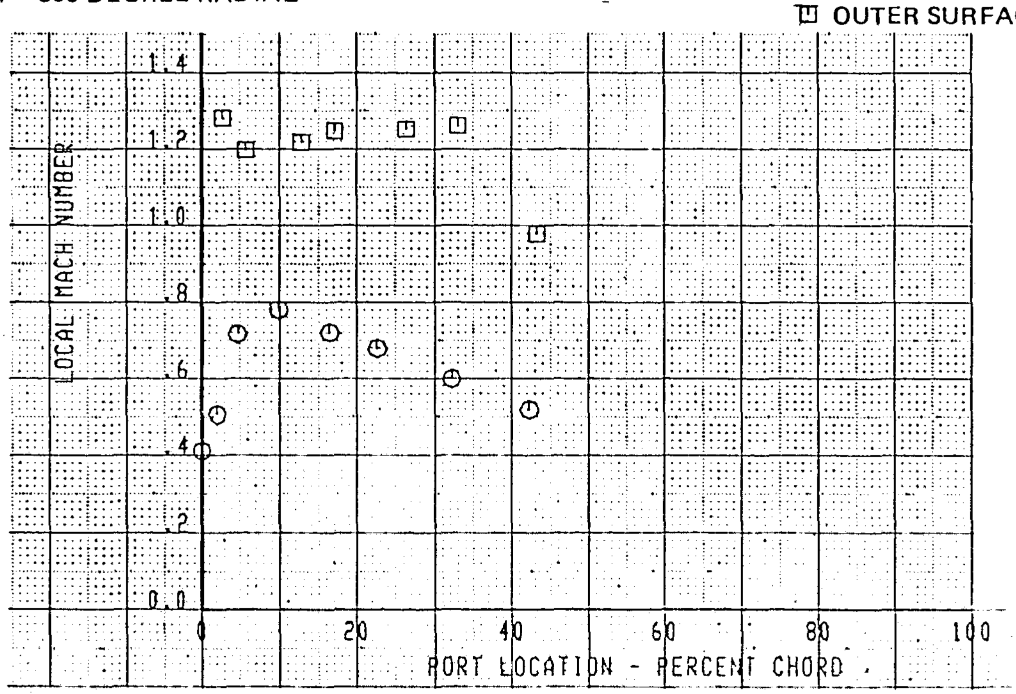
- LOCAL MACH NUMBER ~ NAIL PROGRAM
  ENGINE 4 ~ 180 DEGREE RADIAL

⏀ INNER SURFACE
⊡ OUTER SURFACE



- LOCAL MACH NUMBER ~ NAIL PROGRAM
  ENGINE 4 ~ 300 DEGREE RADIAL

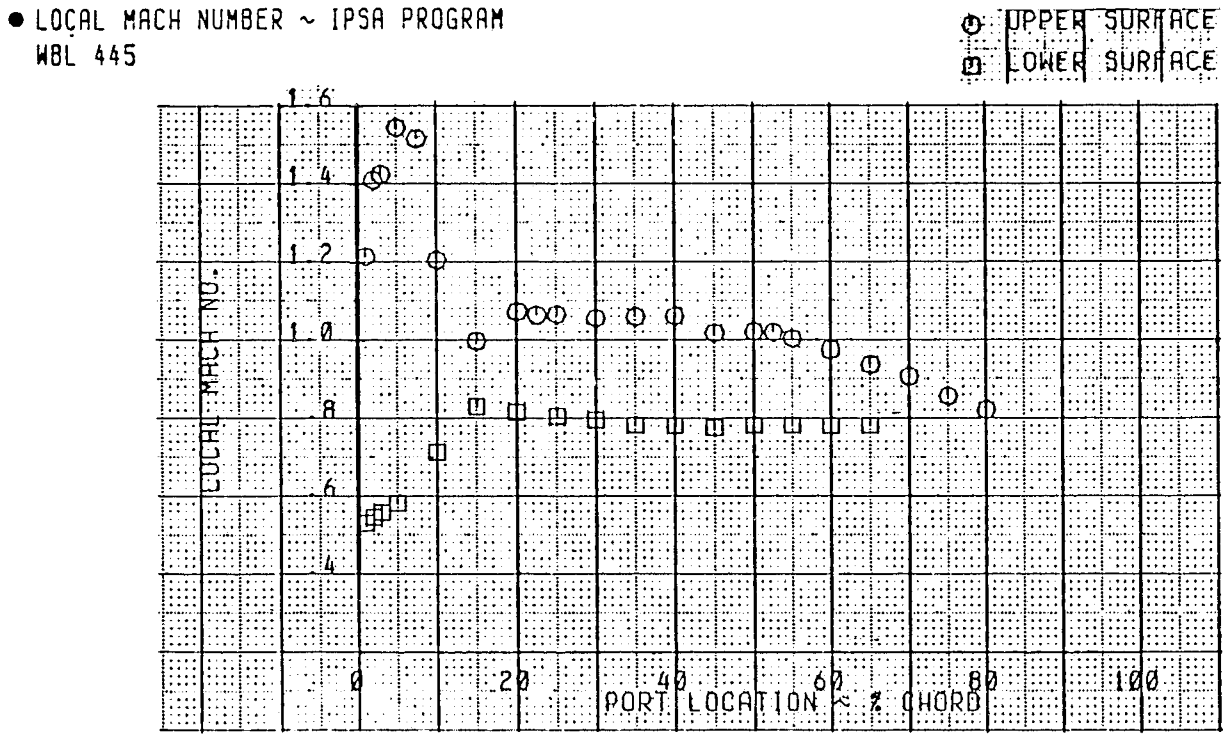
⏀ INNER SURFACE
⊡ OUTER SURFACE

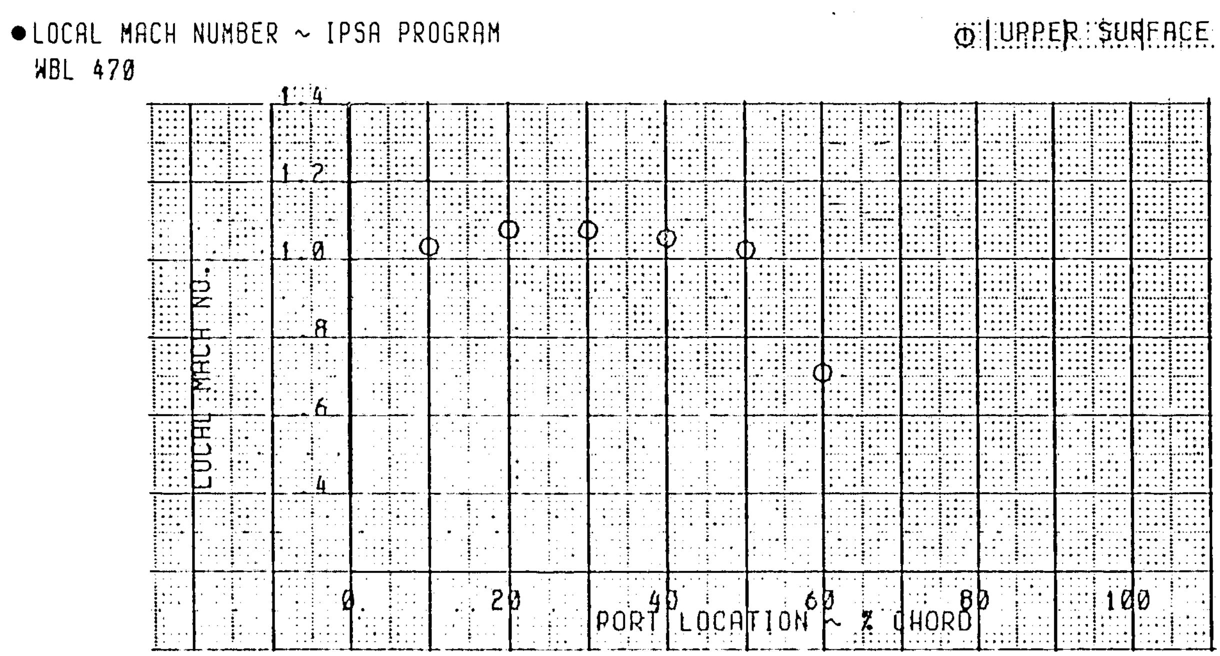


H_p	=	11 591m (38 028 ft)	M	=	0.855
GW	=	216 946 kg (478 283 lbm)	α	=	1.7 deg
Q	=	10.556 kPa (1.531 PSI)	FLAPS	=	0 deg
V_c	=	506.2 km/h (273.3 KTS)	LANDING GEAR UP		

125209-385

Figure B-17. Local Mach Number Plots (Test 273-15, Condition 1.00.137.001) (Concluded)

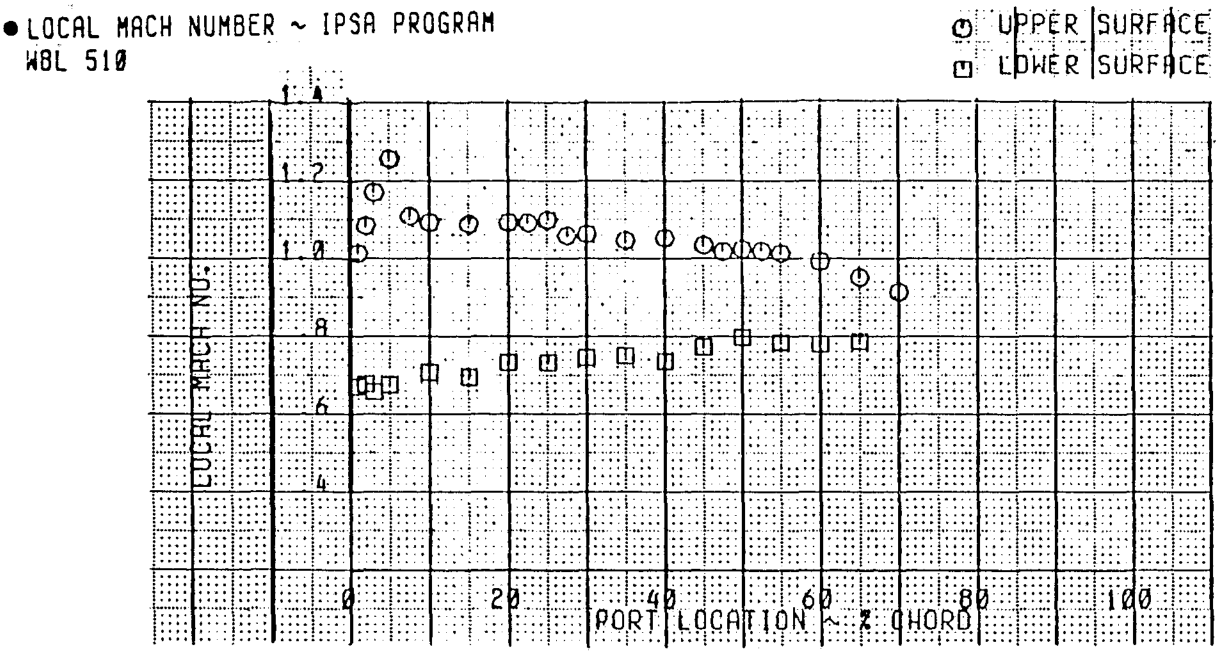


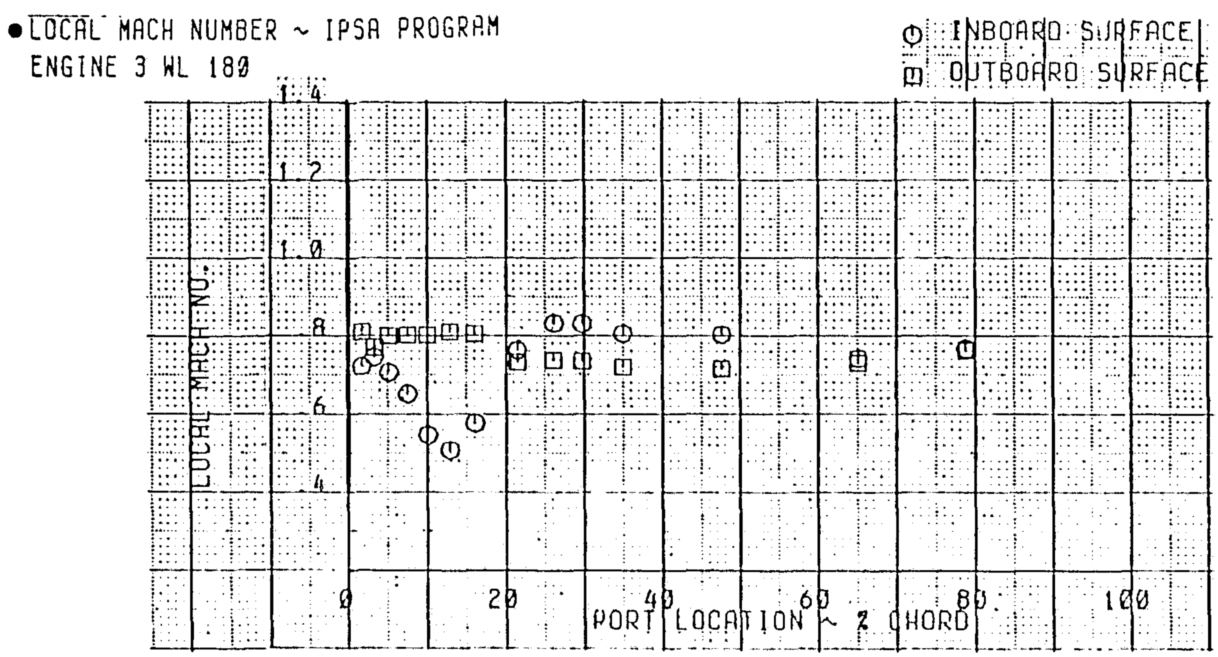


Hp	= 11 596m (38 045 ft)	M	= 0.776
GW	= 218 678 kg (482 102 lbm)	α	= 3.0 deg
Q	= 8.694 kPa (1.261 PSI)	FLAPS	= 0 deg
V_c	= 454.1 km/h (245.2 KTS)	LANDING GEAR UP	

125209-386

Figure B-18. Locals Mach Number Plots (Test 273-15, Condition 1.00.137.002)(Continued)

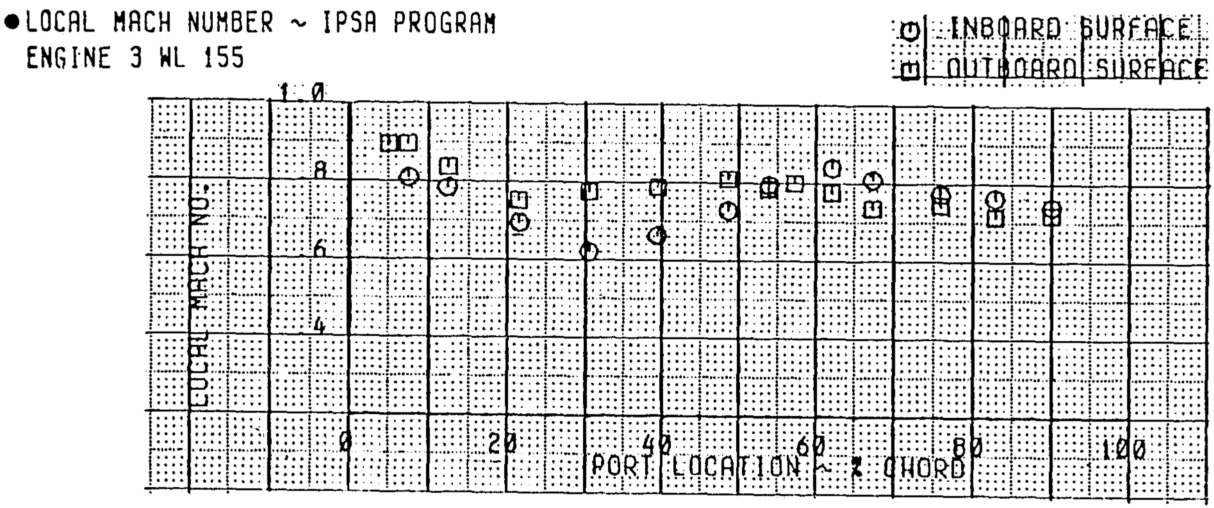


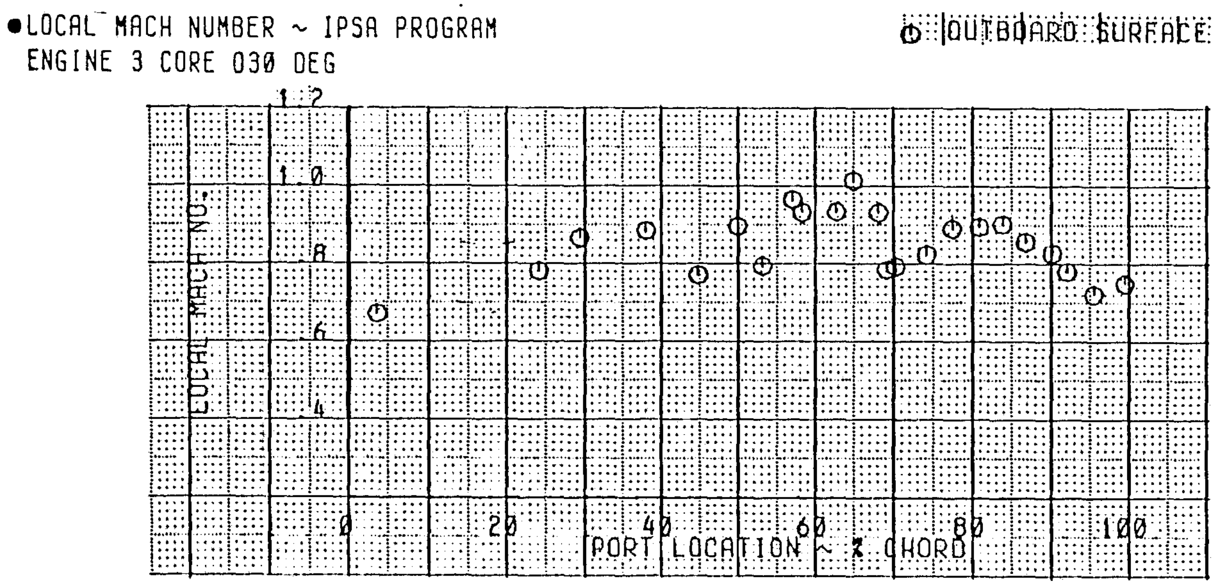


H_p	= 11 596m (38 045 ft)	M	= 0.776
GW	= 218 678 kg (482 102 lbm)	α	= 3.0 deg
Q	= 8.694 kPa (1.261 PSI)	FLAPS = 0 deg	
V_c	= 454.1 km/h (245.2 KTS)	LANDING GEAR UP	

125209-387

Figure B-18. Local Mach Number Plots (Test 273-15, Condition 1.00.137.002) (Continued)



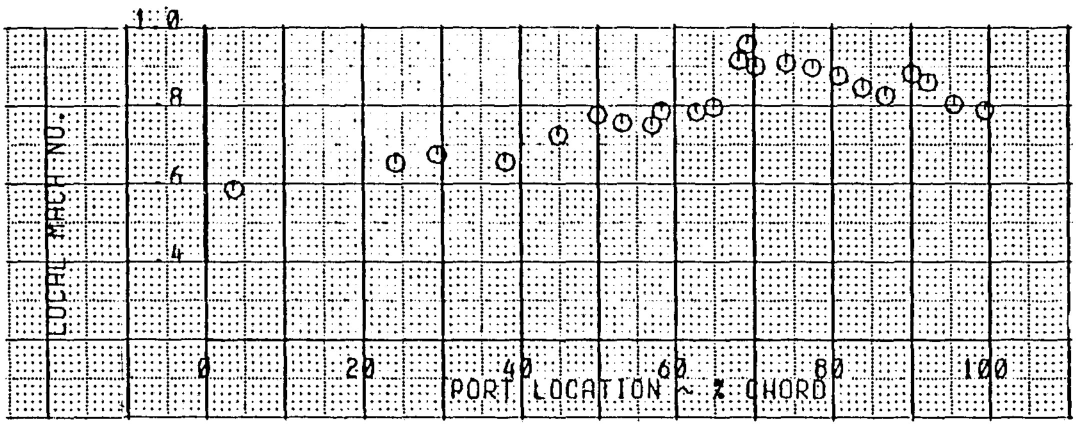


Hp	= 11 596m (38 045 ft)	M	= 0.776
GW	= 218 678 kg (482 102 lbm)	α	= 3.0 deg
Q	= 8.694 kPa (1.261 PSI)	FLAPS = 0 deg	
V_c	= 454.1 km/h (245.2 KTS)	LANDING GEAR UP	

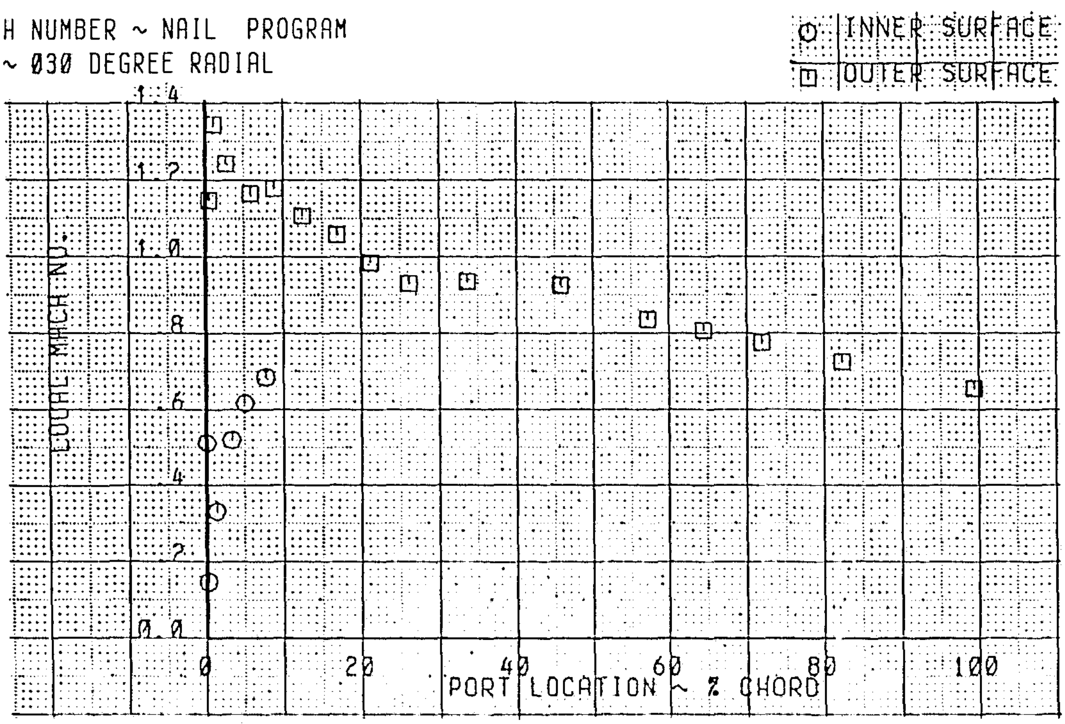
125209-388

Figure B-18. Local Mach Number Plots (Test 273-15, Condition 1.00.137.002)(Continued)

●LOCAL MACH NUMBER ~ IPSA PROGRAM
ENGINE 3 CORE 330 DEG



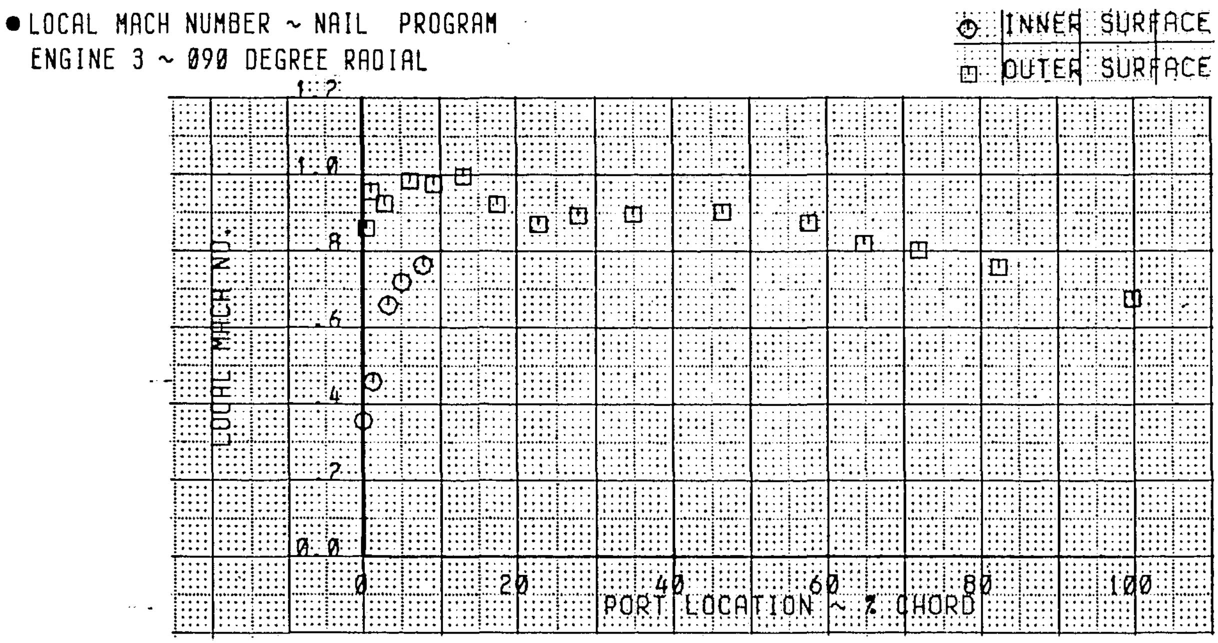
●LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 3 ~ 030 DEGREE RADIAL

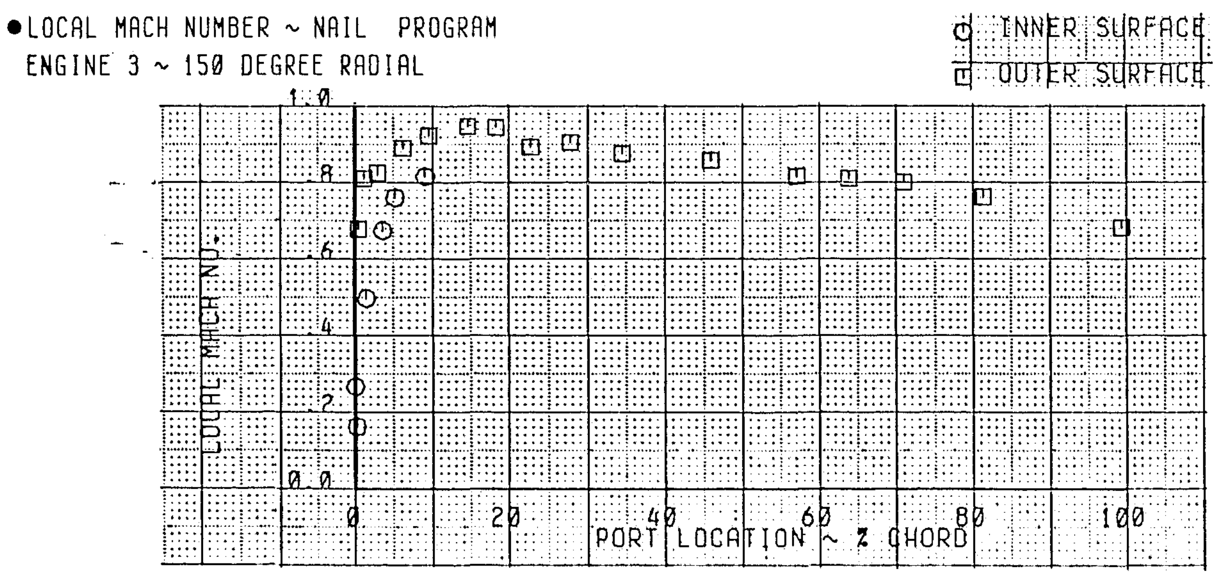


Hp	=	11 596m (38 045 ft)	M	=	0.776
GW	=	218 678 kg (482 102 lbm)	α	=	3.0 deg
Q	=	8.694 kPa (1.261 PSI)	FLAPS = 0 deg.		
V_c	=	454.1 km/h (245.2 KTS)	LANDING GEAR UP		

125209-389

Figure B-18. Local Mach Number Plots (Test 273-15, Condition 1.00.137.002)(Continued)

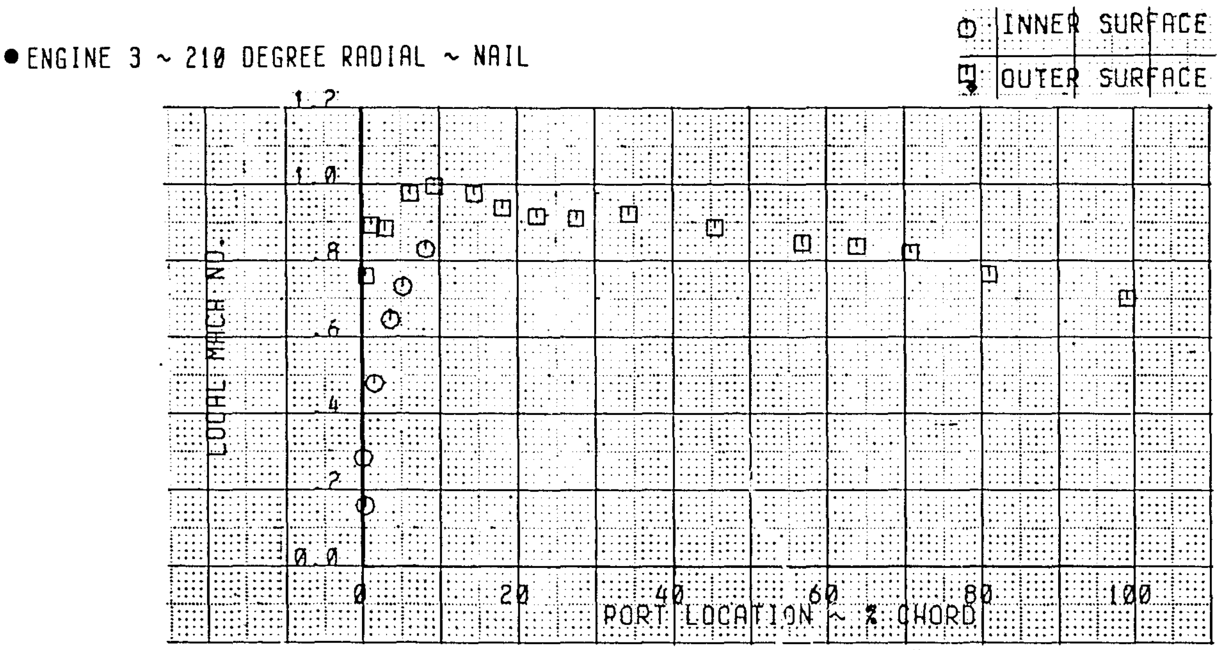


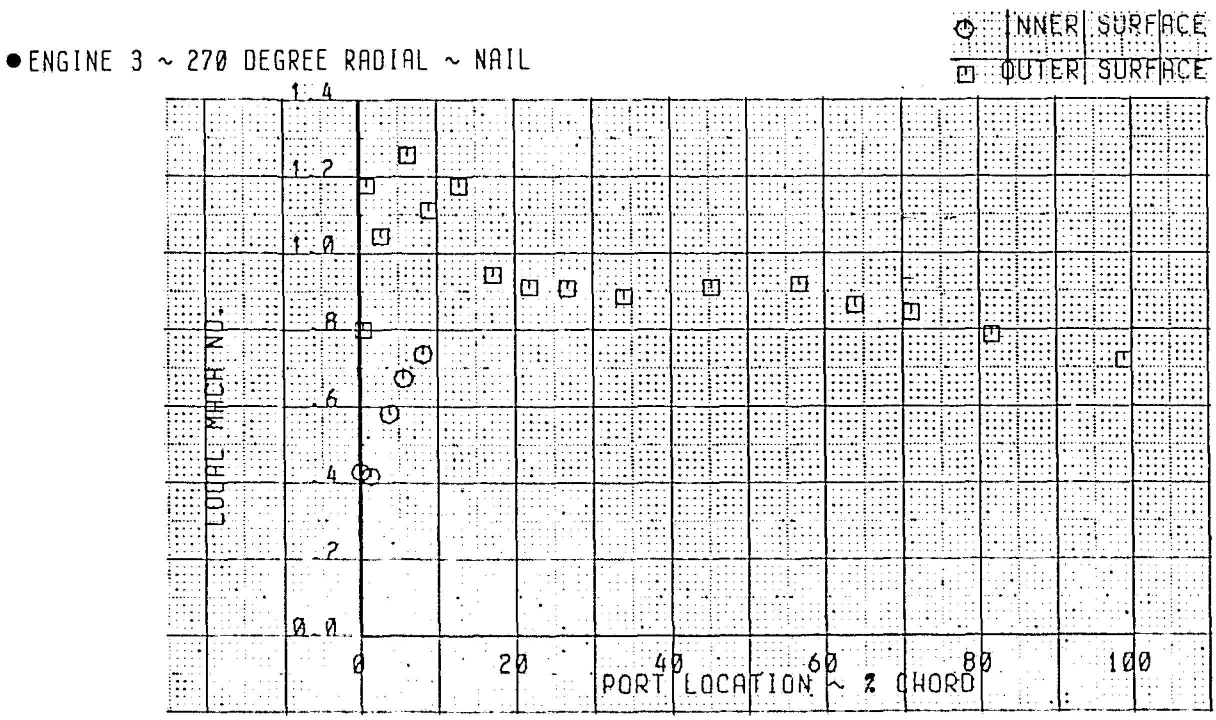


Hp	=	11 596m (38 045 ft)	M	=	0.776
GW	=	218 678 kg (482 102 lbm)	α	=	3.0 deg
Q	=	8.694 kPa (1.261 PSI)	FLAPS = 0 deg		
V_c	=	454 1 km/h (245.2 KTS)	LANDING GEAR UP		

125209-390

Figure B-18. Local Mach Number Plots (Test 273-15, Condition 1.00.137.002)(Continued)

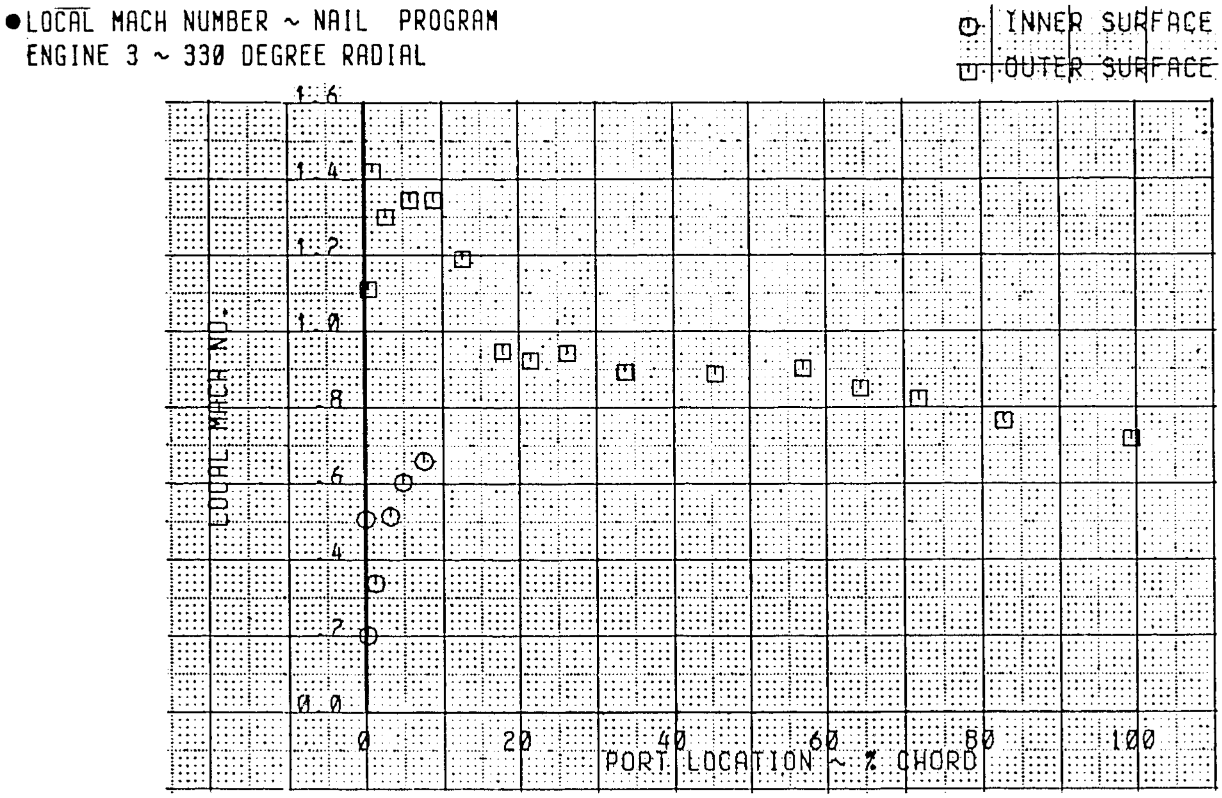




Hp	= 11 596m (38 045 ft)	M	= 0.776
GW	= 218 678 kg (482 102 lbm)	α	= 3.0 deg
Q	= 8.694 kPa (1.261 PSI)	FLAPS = 0 deg	
V_c	= 454.1 km/h (245.2 KTS)	LANDING GEAR UP	

125209-391

Figure B-18. Local Mach Number Plots (Test 273-15, Condition 1.00.137.002)(Continued)

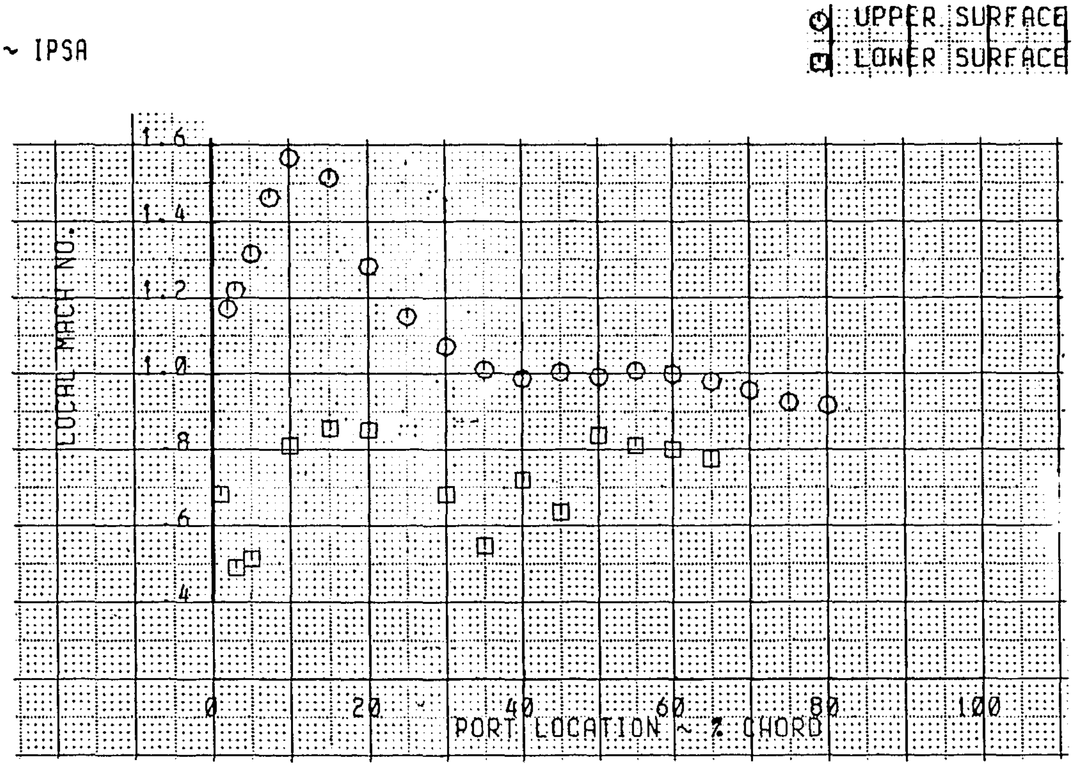


Hp	= 11 596m (38 045 ft)	M	= 0.776
GW	= 218 678 kg (482 102 lbm)	α	= 3.0 deg
Q	= 8.694 kPa (1.261 PSI)	FLAPS = 0 deg	
V_c	= 454.1 km/h (245.2 KTS)	LANDING GEAR UP	

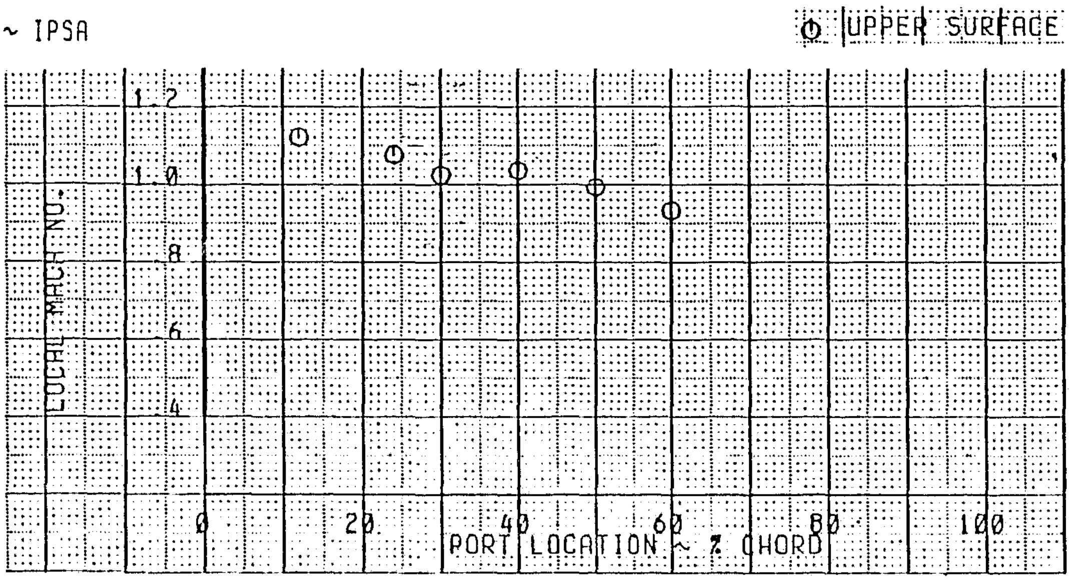
125209-392

Figure B-18. Local Mach Number Plots (Test 273-15, Condition 1.00.137.002)(Continued)

● WBL 1309 ~ IPSA



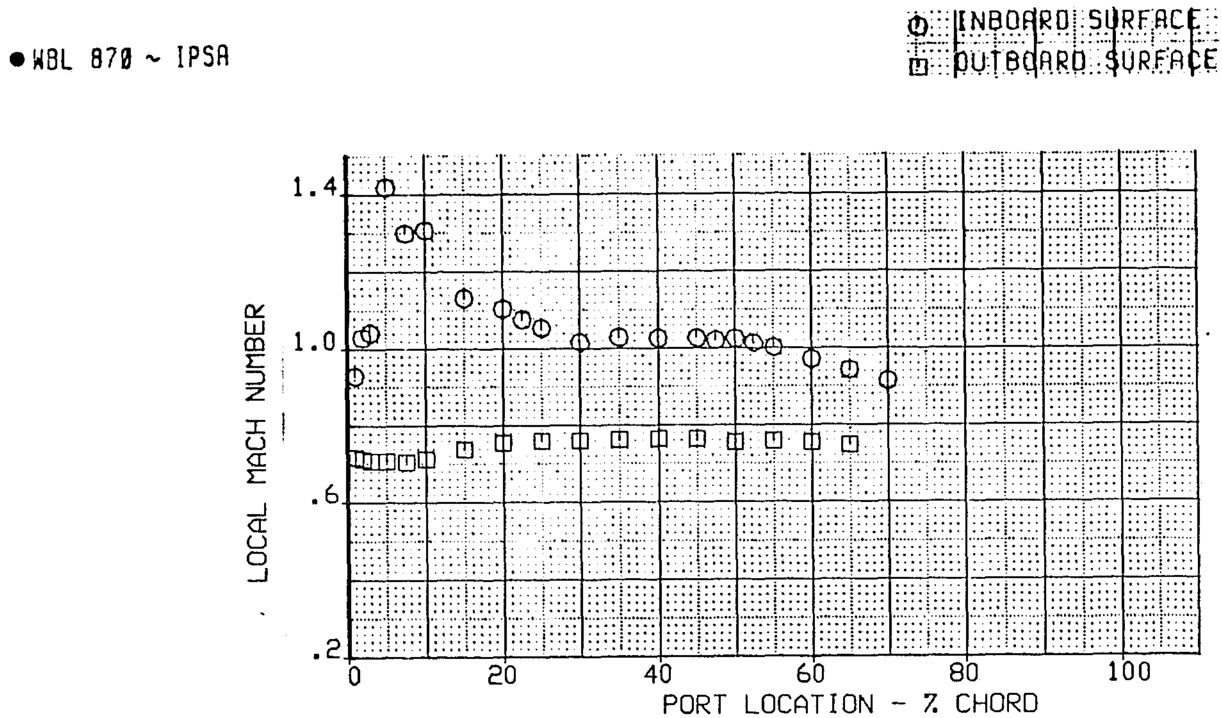
● WBL 834 ~ IPSA

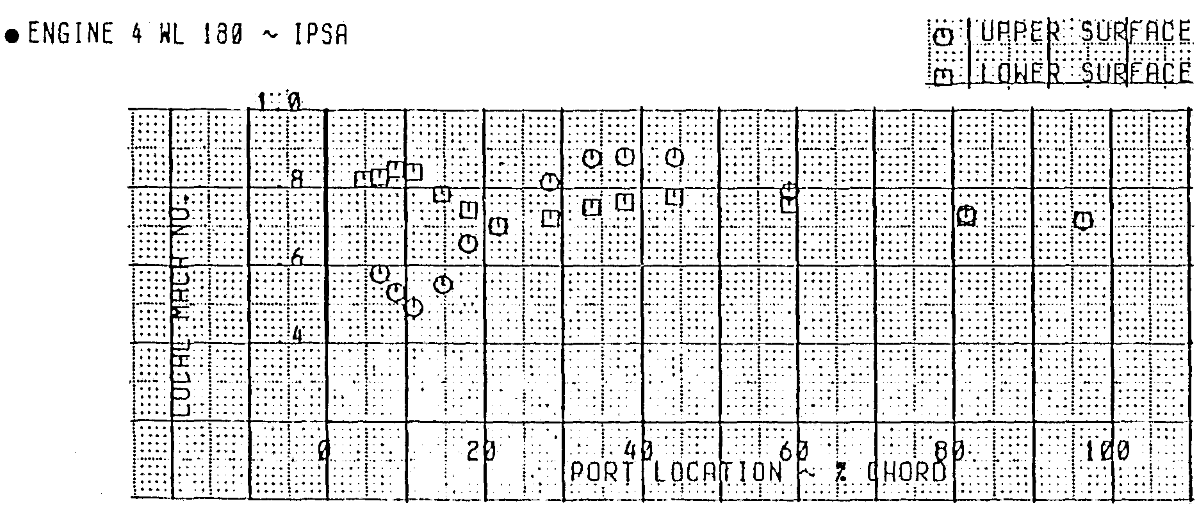


Hp	=	11 596m (38 045 ft)	M	=	0.776
GW	=	218 678 kg (482 102 lbm)	α	=	3.0 deg
Q	=	8.694 kPa (1.261 PSI)	FLAPS = 0 deg		
V_c	=	454.1 km/h (245.2 KTS)	LANDING GEAR UP		

125209-393

Figure B-18. Local Mach Number Plots (Test 273-15, Condition 1.00.137.002)(Continued)

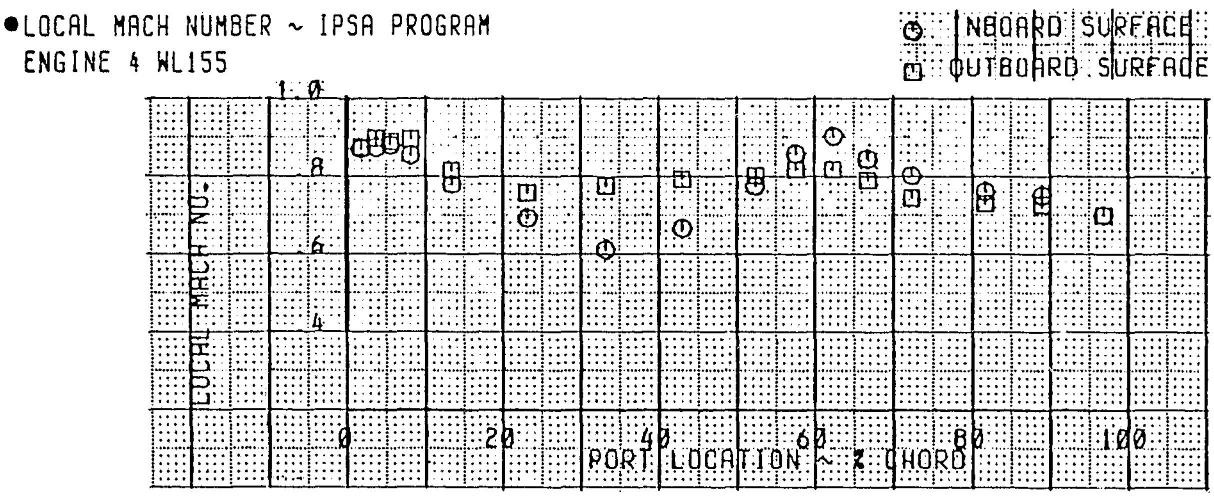


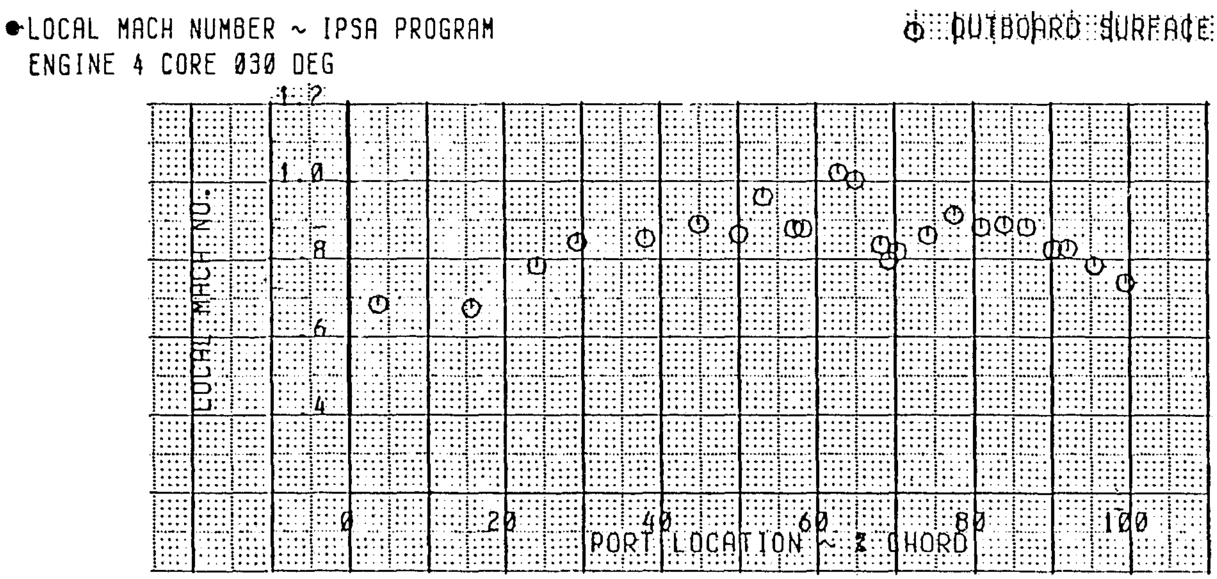


Hp	=	11 596m (38 045 ft)	M	=	0.776
GW	=	218 678 kg (482 102 lbm)	α	=	3.0 deg
Q	=	8.694 kPa (1.261 PSI)	FLAPS = 0 deg		
V_c	=	454.1 km/h (245.2 KTS)	LANDING GEAR UP		

125209-394

Figure B-18. Local Mach Number Plots (Test 273-15, Condition 1.00.137.002)(Continued)

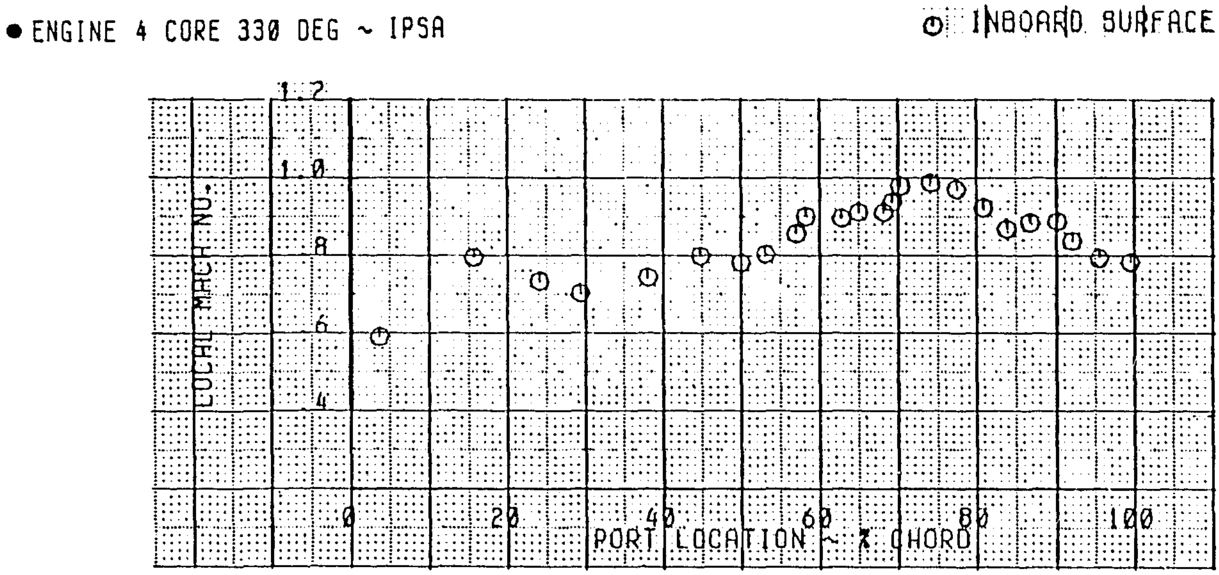


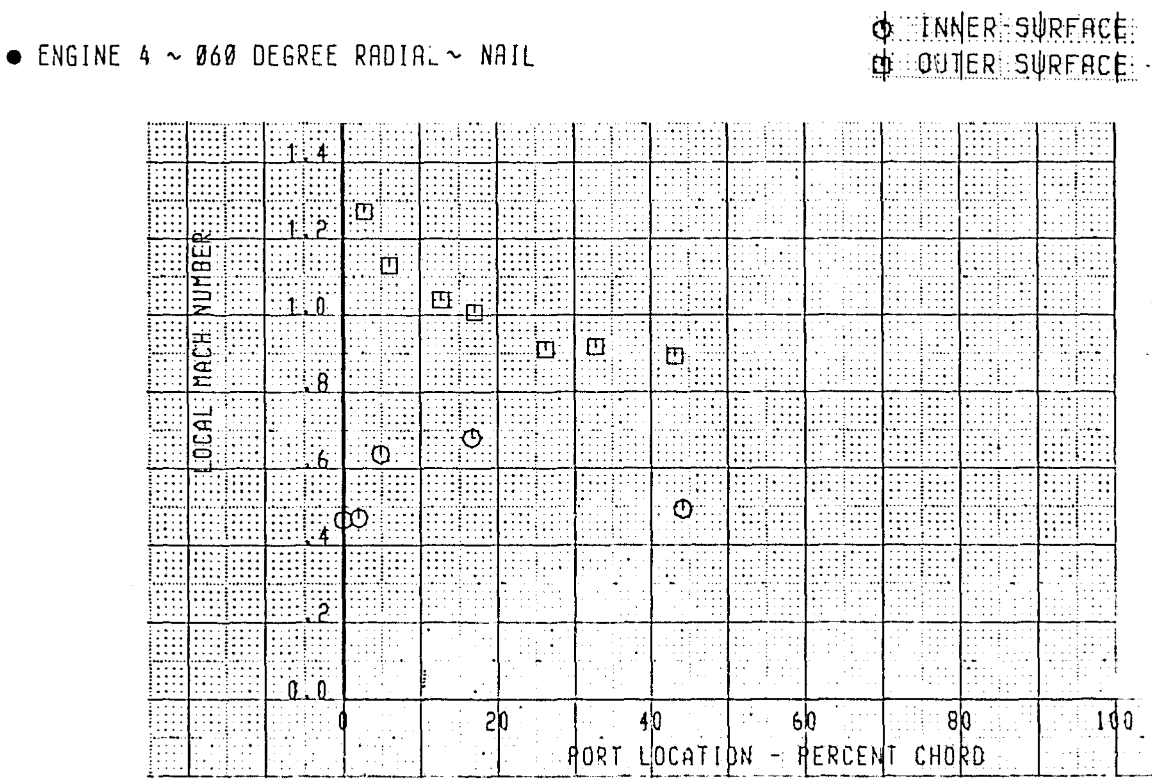


H_p	=	11 596m (38 045 ft)	M	=	0.776
GW	=	218 678 kg (482 102 lbm)	α	=	3.0 deg
Q	=	8.694 kPa (1.261 PSI)	FLAPS = 0 deg		
V_c	=	454.1 km/h (245.2 KTS)	LANDING GEAR UP		

125209-395

Figure B-18. Local Mach Number Plots (Test 273-15, Condition 1.00.137.002)(Continued)

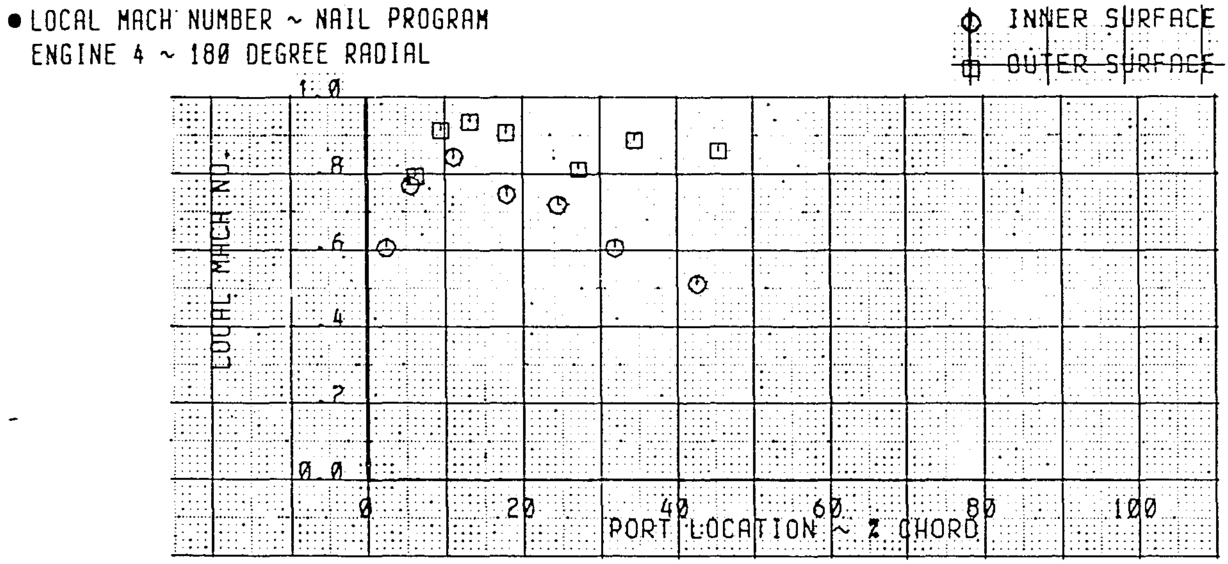


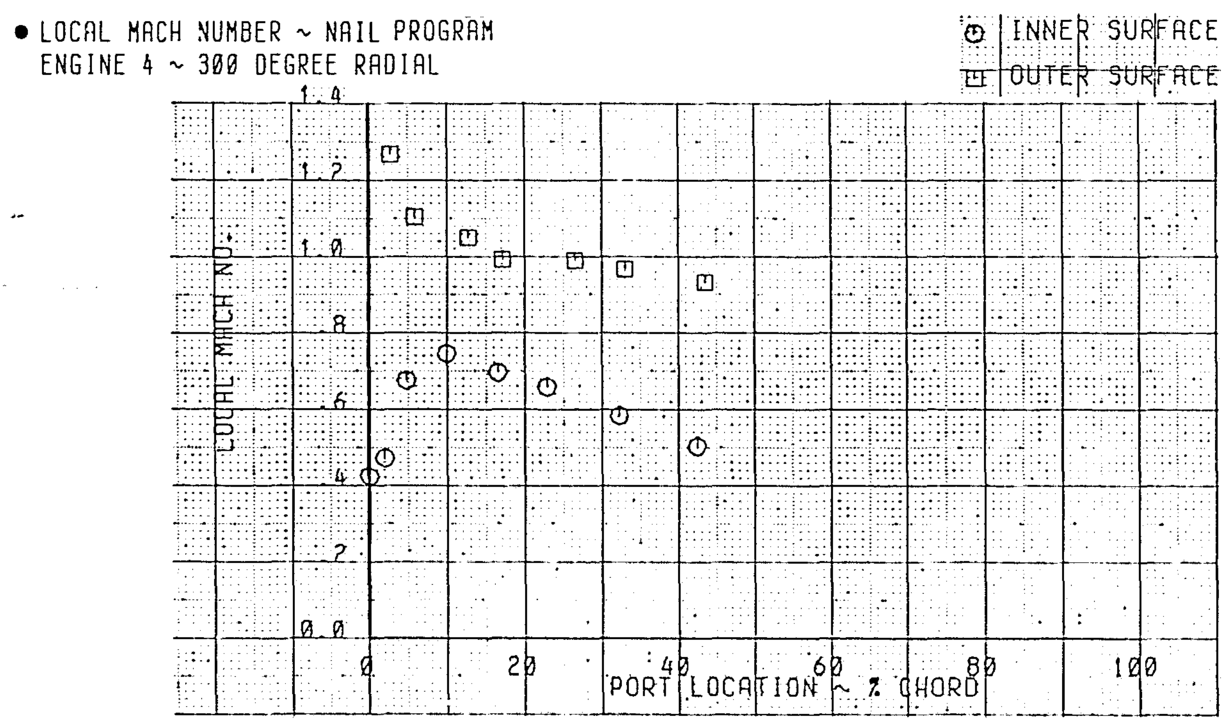


Hp	= 11 596m (38 045 ft)	M	= 0.776
GW	= 218 678 kg (432 102 lbm)	α	= 3.0 deg
Q	= 8.694 kPa (1.261 PSI)	FLAPS = 0 deg	
V_c	= 454.1 km/h (245.2 KTS)	LANDING GEAR UP	

125209-398

Figure B-18. Local Mach Number Plots (Test 273-15, Condition 1.00.137.002)(Continued)

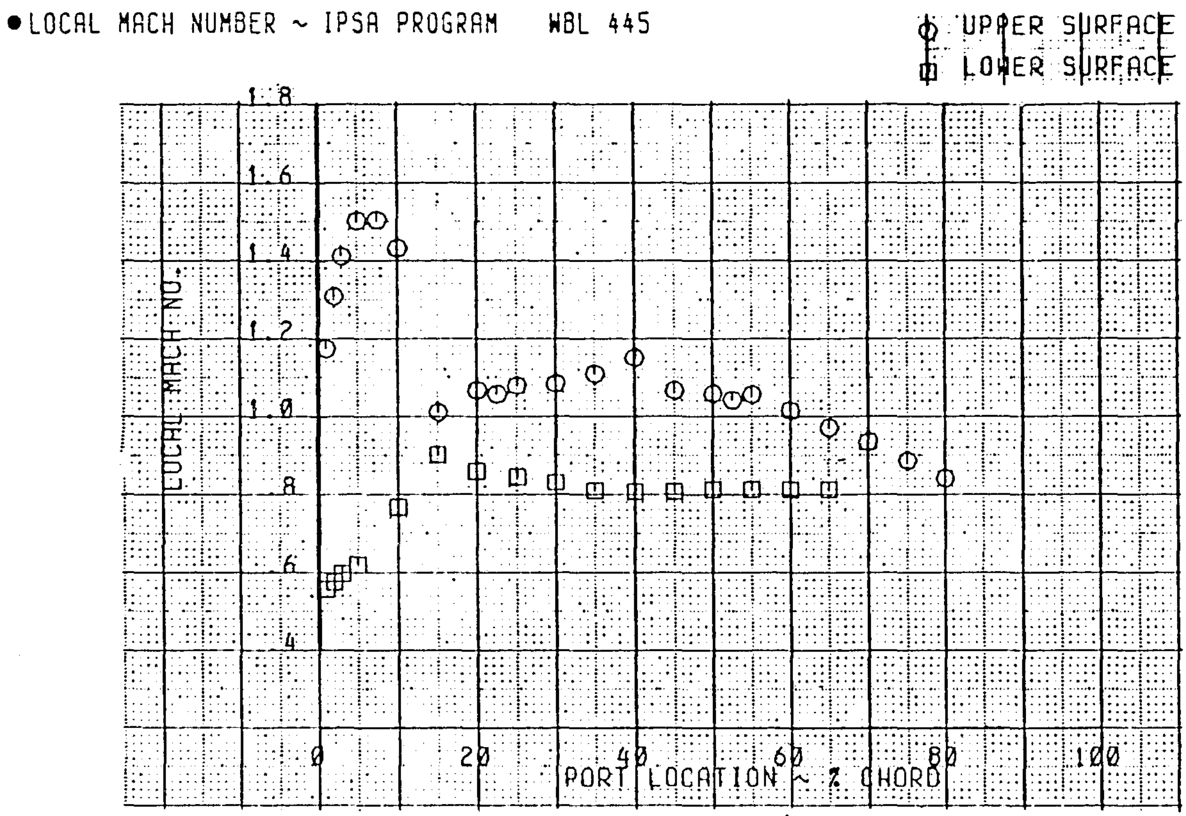


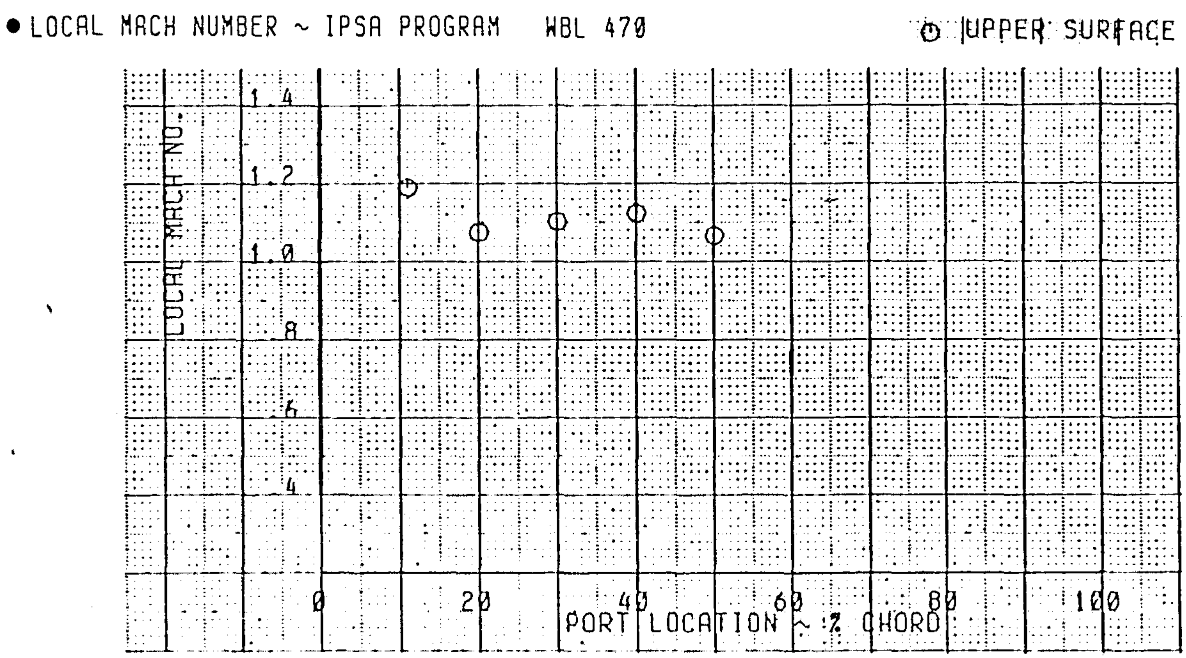


Hp	= 11 596m (38 045 ft)	M	= 0.776
GW	= 218 678 kg (482 102 lbm)	α	= 3.0 deg
Q	= 8.694 kPa (1.261 PSI)	FLAPS = 0 deg	
V_c	= 454.1 km/h (245.2 KTS)	LANDING GEAR UP	

125209-397

Figure B-18. Local Mach Number Plots (Test 273-15, Condition 1.00.137.002) (Concluded)



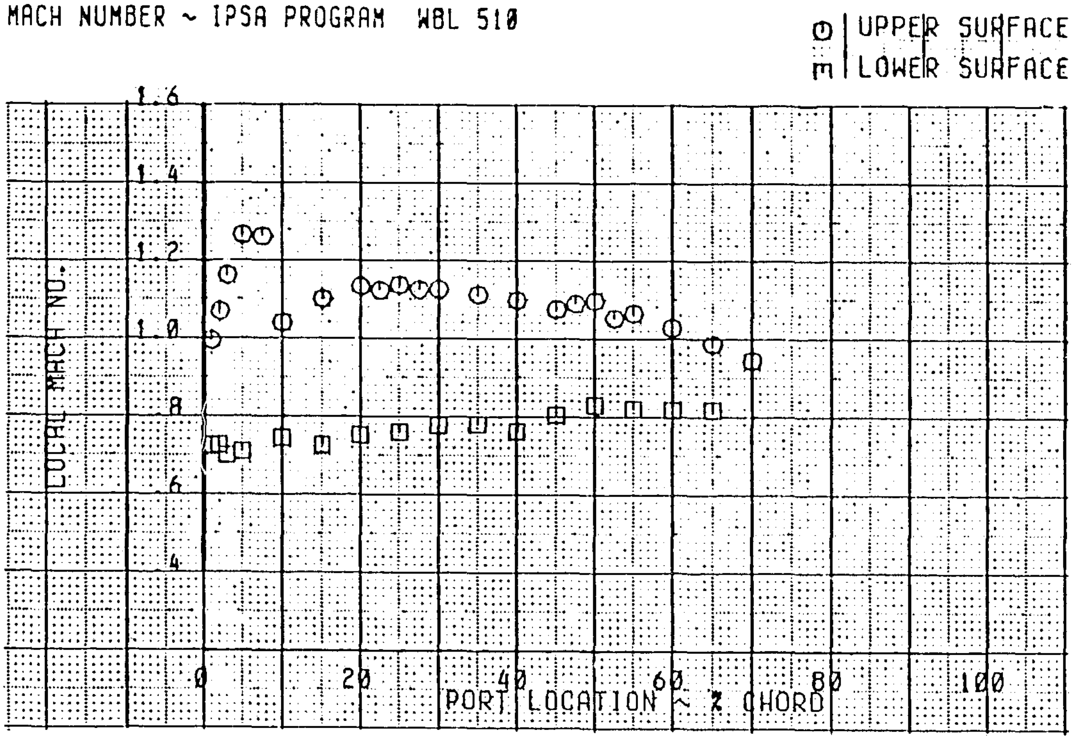


Hp	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS = 0 deg		
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

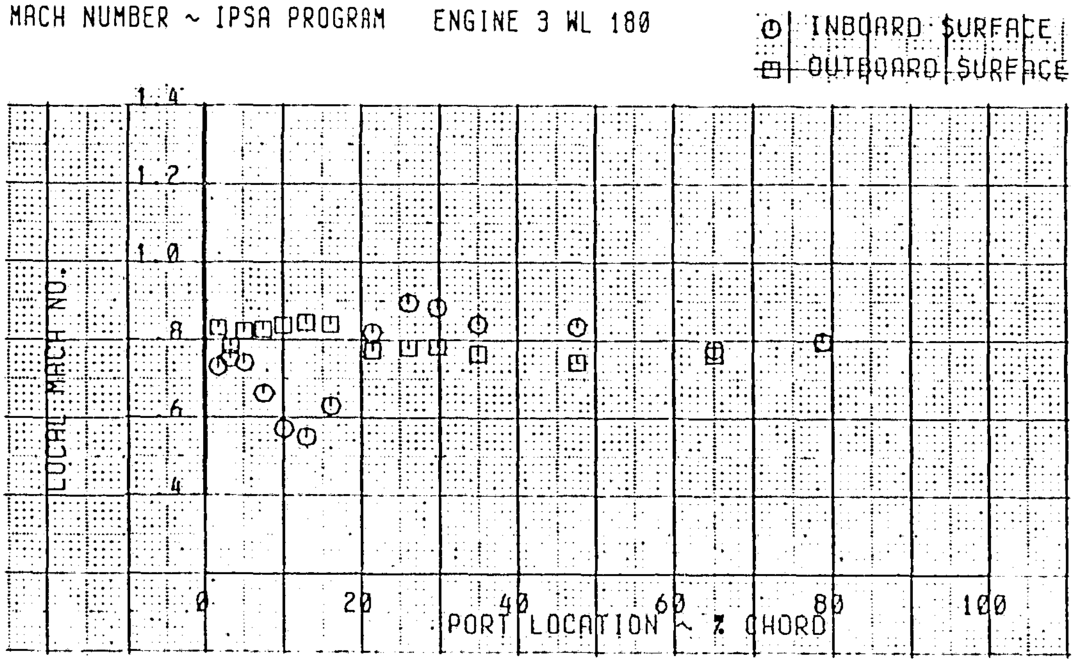
125209-398

Figure B-19. Local Mach Number Plots (Test 273-15, Condition 1.00.137.003)

● LOCAL MACH NUMBER ~ IPSA PROGRAM WBL 510



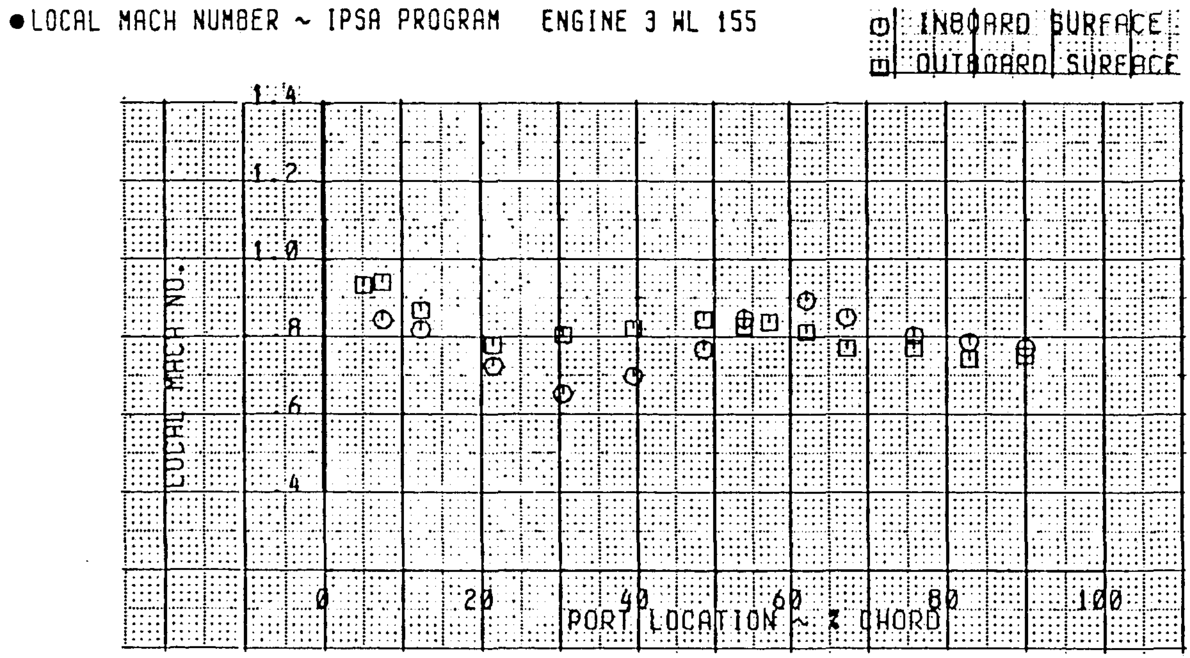
● LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 3 WL 180

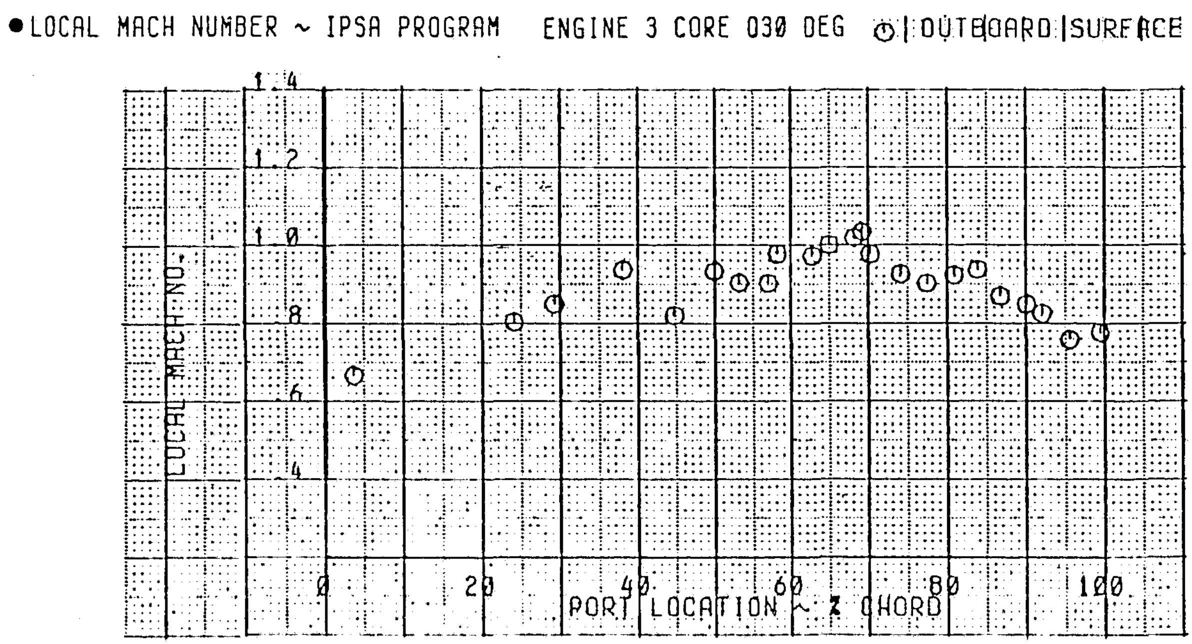


Hp	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS	=	0 deg
V_c	=	470 6 km/h (254.1 KTS)	LANDING GEAR UP		

125209-399

Figure B-19. Local Mach Number Plots (Test 273-15, Condition 1.00.137.003)(Continued)



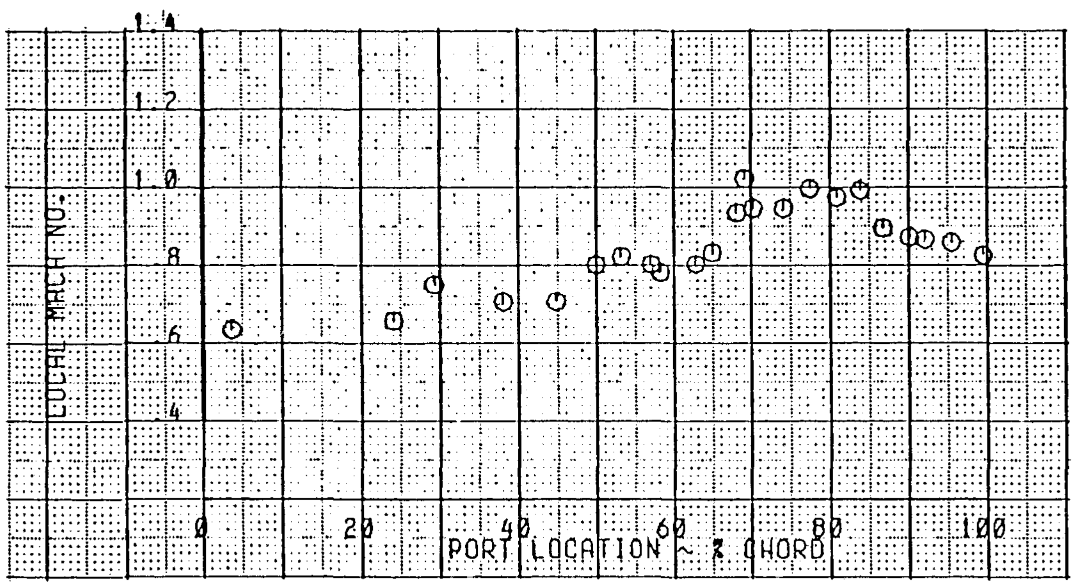


Hp	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS = 0 deg		
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

125209-400

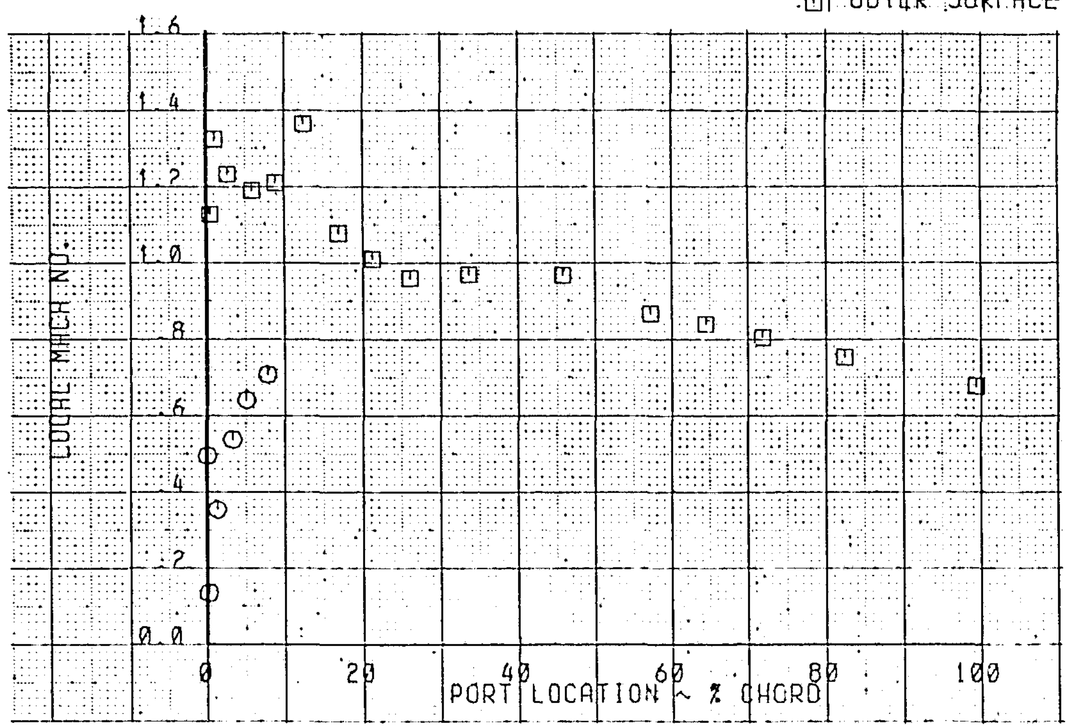
Figure B-19. Local Mach Number Plots (Test 273-15, Condition 1.00.137.003)(Continued)

● LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 3 CORE 330 DEG ⊙ INBOARD SURFACE



● LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 3 ~ 030 DEGREE RADIAL

⊙ INNER SURFACE
⊡ OUTER SURFACE

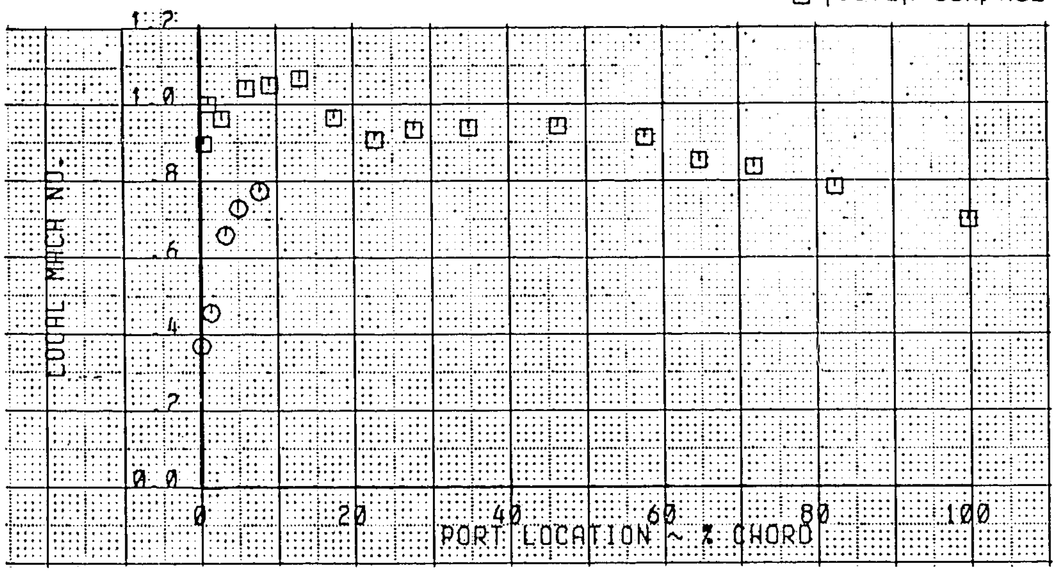


Hp	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS = 0 deg		
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

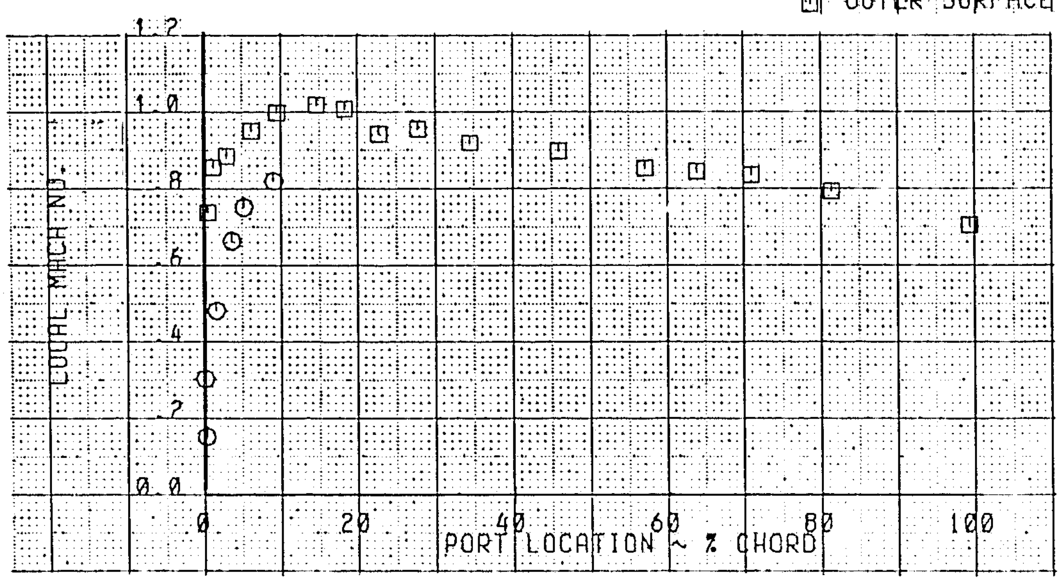
125209-401

Figure B-19. Local Mach Number Plots (Test 273-15, Condition 1.00.137.003) (Continued)

● LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 3 ~ 090 DEGREE RADIAL



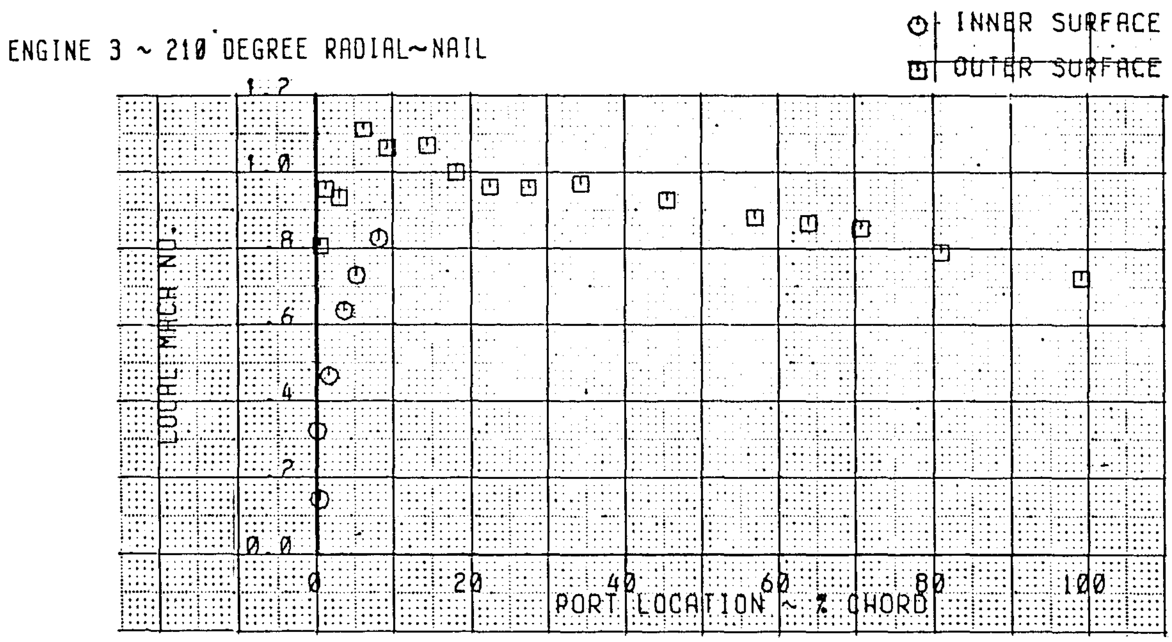
● LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 3 ~ 150 DEGREE RADIAL

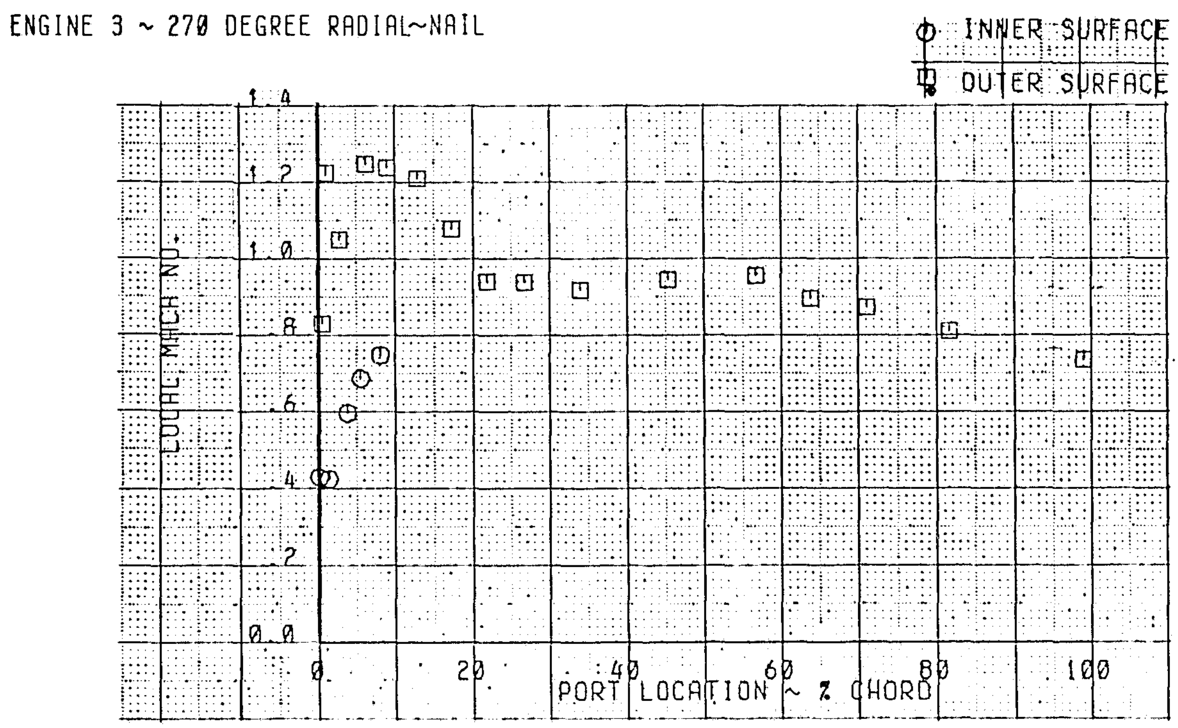


Hp	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS = 0 deg		
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

125209-402

Figure B-19. Local Mach Number Plots (Test 273-15, Condition 1.00.137.003)(Continued)

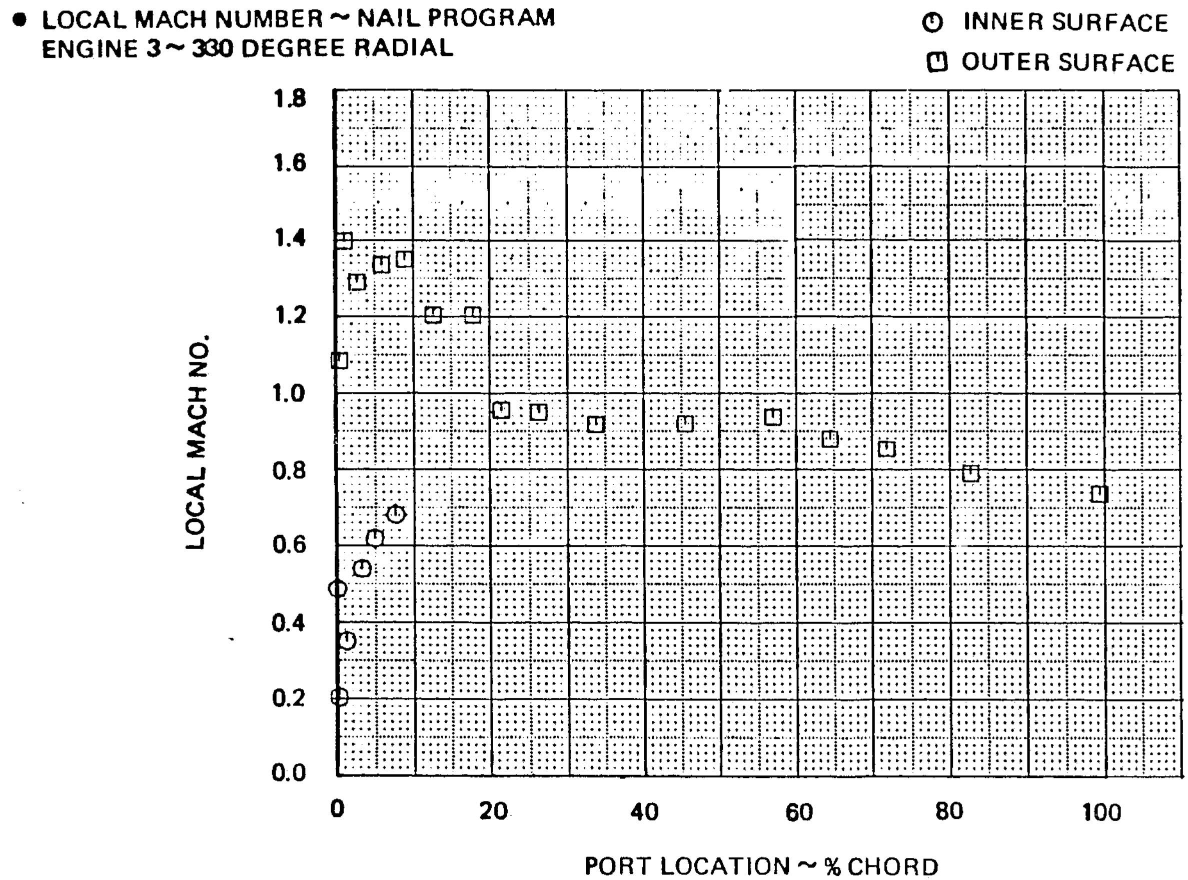




Hp	=	11 601m (38 060 ft)	M	= 0.802
GW	=	218 085 kg (480 796 lbm)	α	= 2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS = 0 deg	
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP	

125209-403

Figure B-19. Local Mach Number Plots (Test 273-15, Condition 1.00.137.003)(Continued)

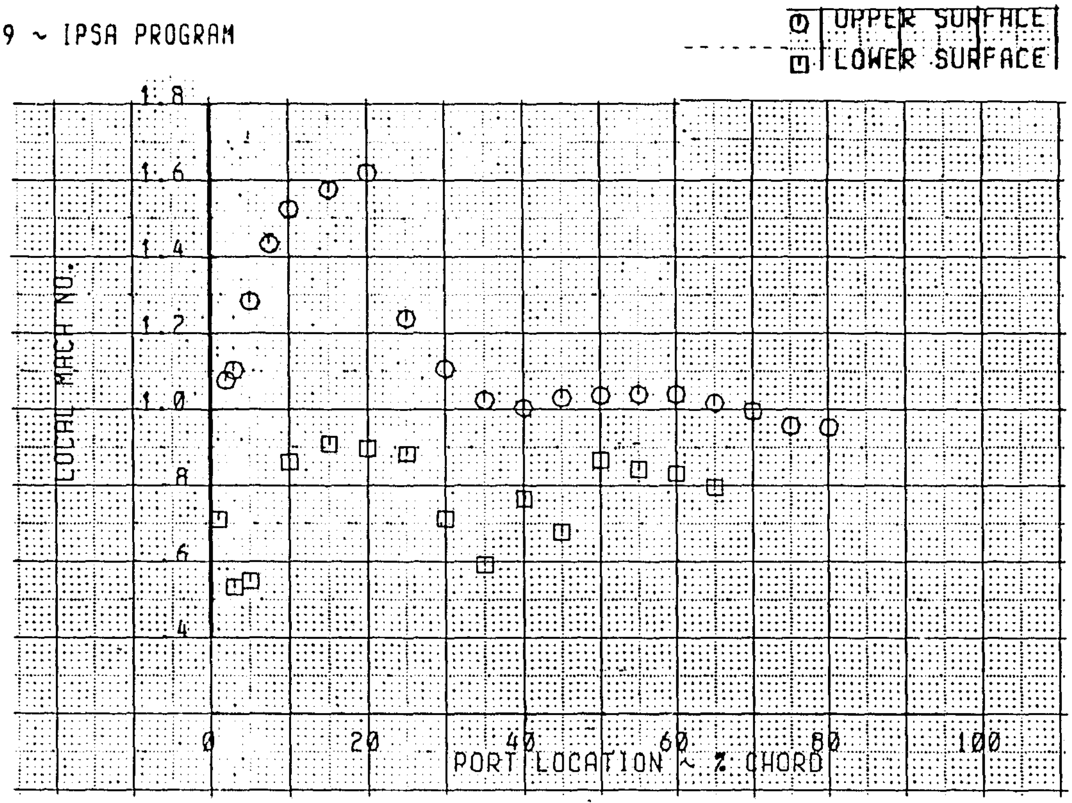


H_P	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS = 0 deg		
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

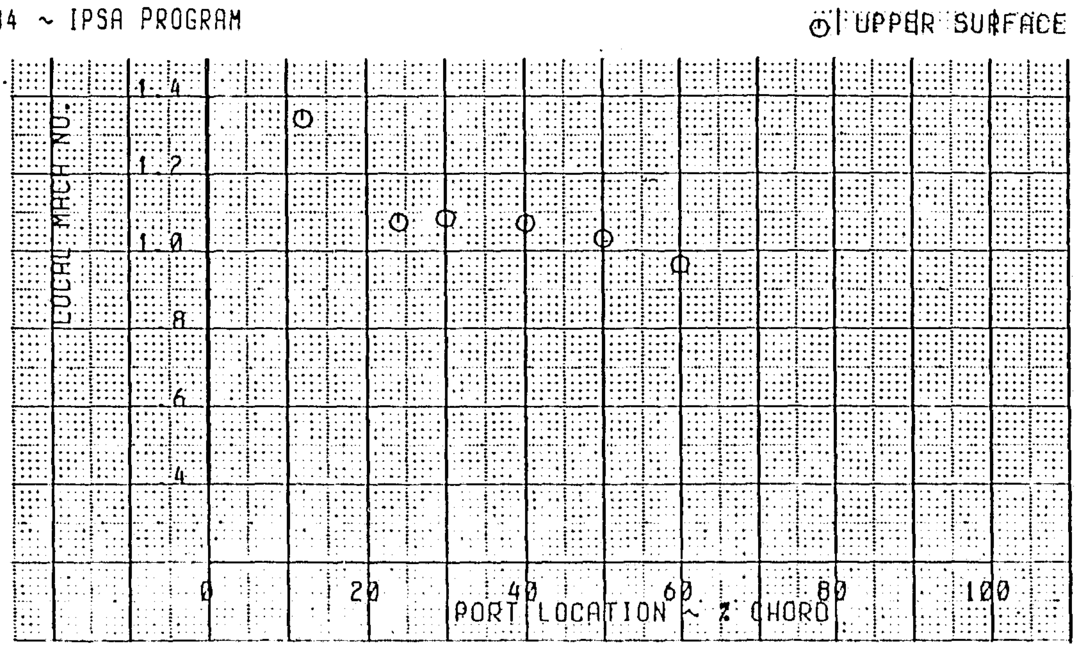
125209-404

Figure B-19. Local Mach Number Plots (Test 273-15, Condition 1.00.137.003)(Continued)

• WBL 809 ~ IPSA PROGRAM



• WBL 834 ~ IPSA PROGRAM

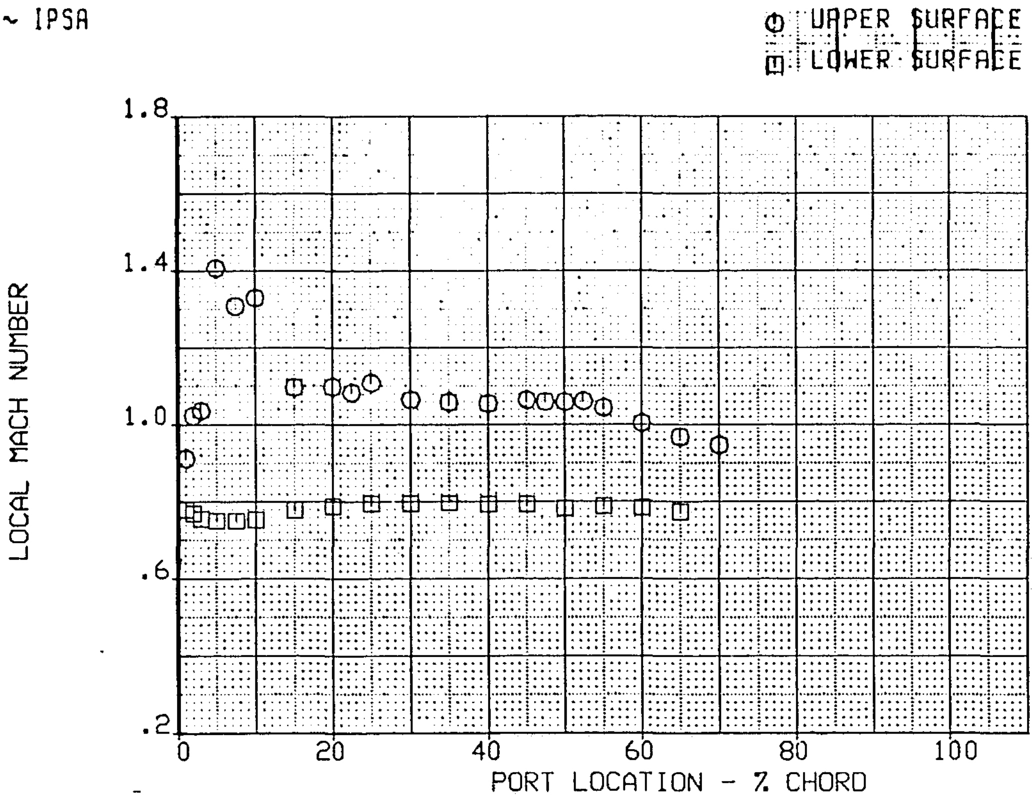


Hp	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS = 0 deg		
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

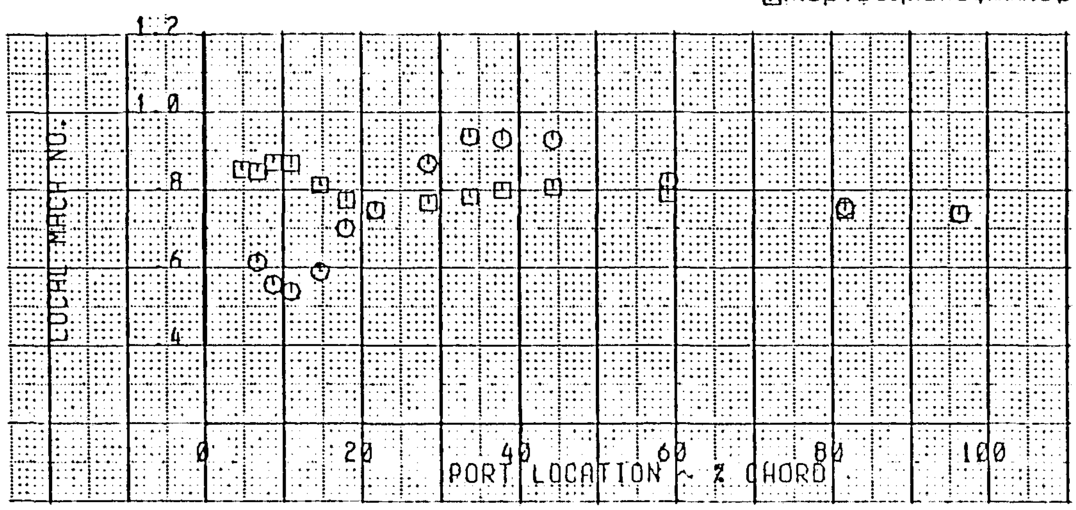
125209-405

Figure B-19. Local Mach Number Plots (Test 273-15, Condition 1.00.137.003)(Continued)

• WBL 870 ~ IPSA



• ENGINE 4 WL 180 ~ IPSA PROGRAM

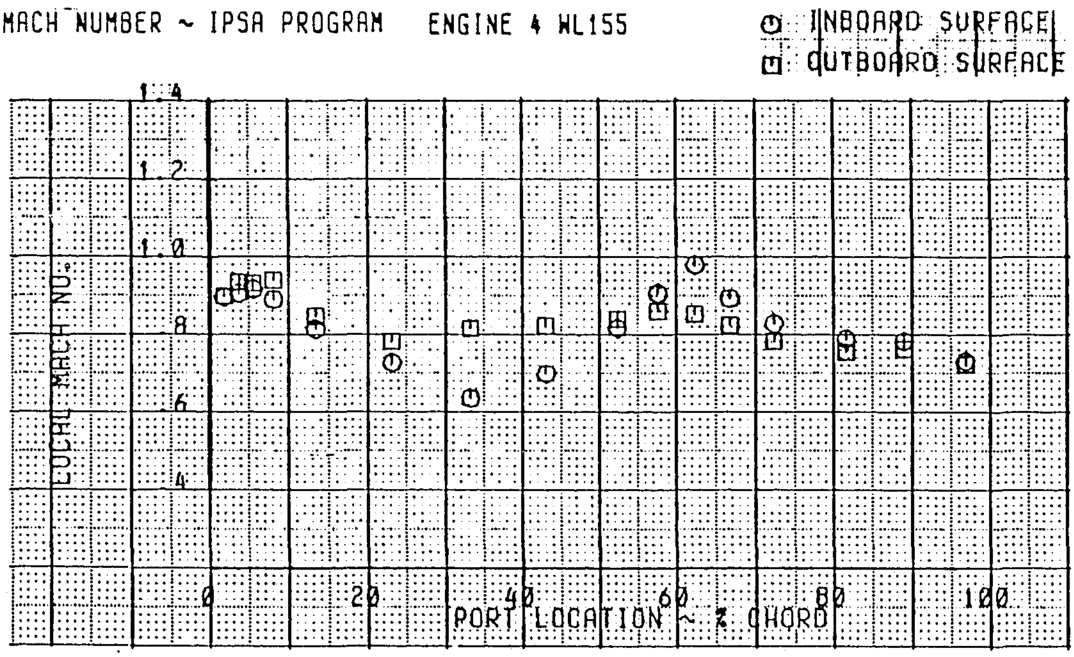


Hp	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS =		0 deg
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

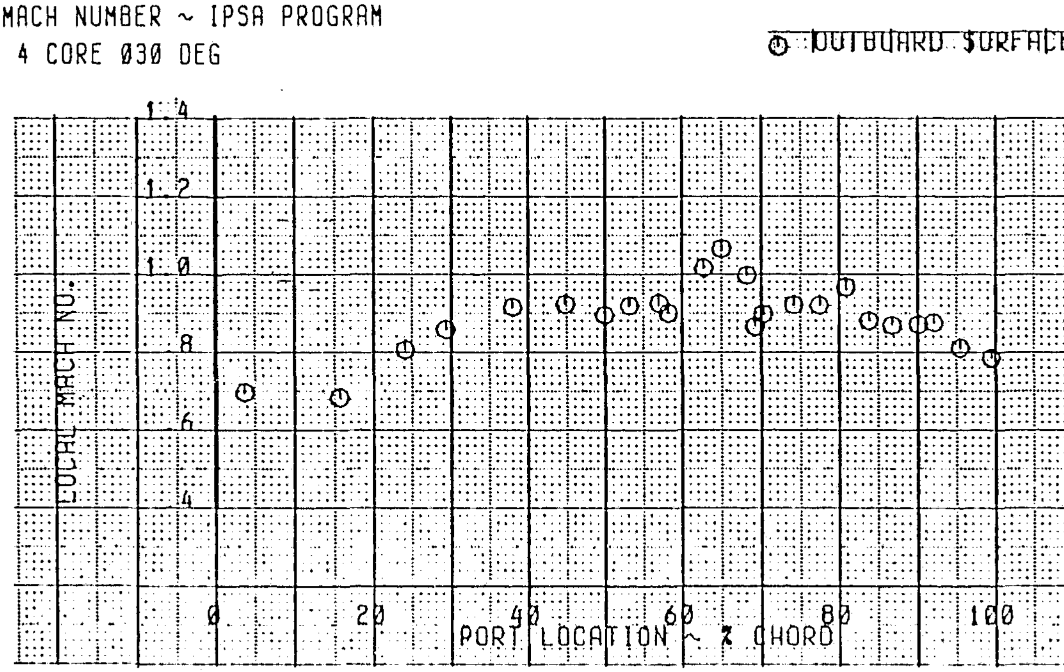
125209-406

Figure B-19. Local Mach Number Plots (Test 273-15, Condition 1.00.137.003) (Continued)

● LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 4 WL155



● LOCAL MACH NUMBER ~ IPSA PROGRAM
ENGINE 4 CORE 030 DEG

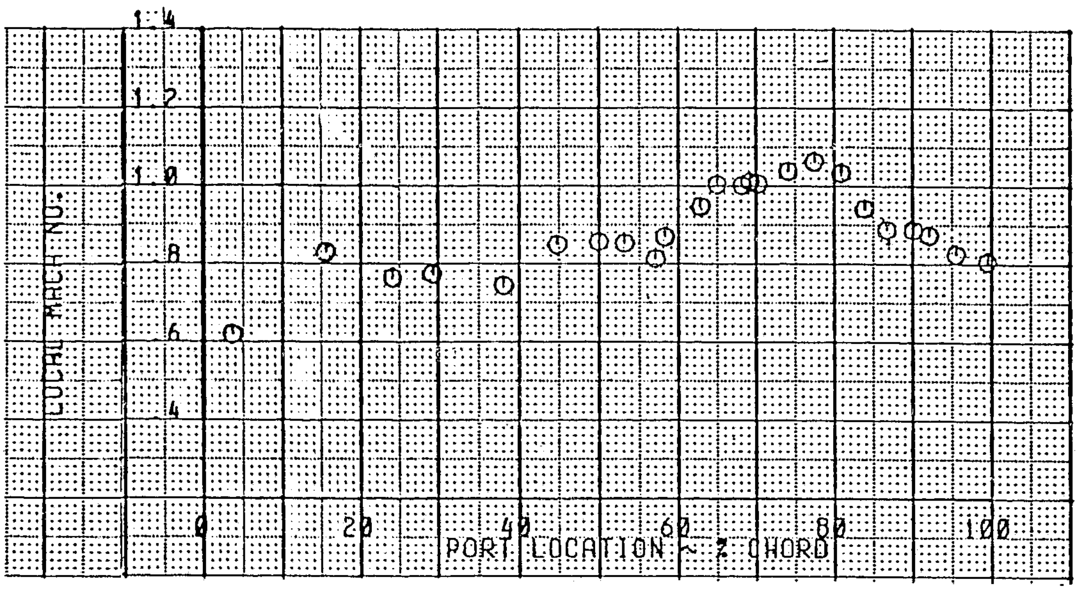


Hp = 11 601m (38 060 ft)		M = 0.802	
GW = 218 085 kg (480 796 lbm)		α = 2.6 deg	
Q = 9.267 kPa (1.344 PSI)		FLAPS = 0 deg	
V_c = 470.6 km/h (254.1 KTS)		LANDING GEAR UP	

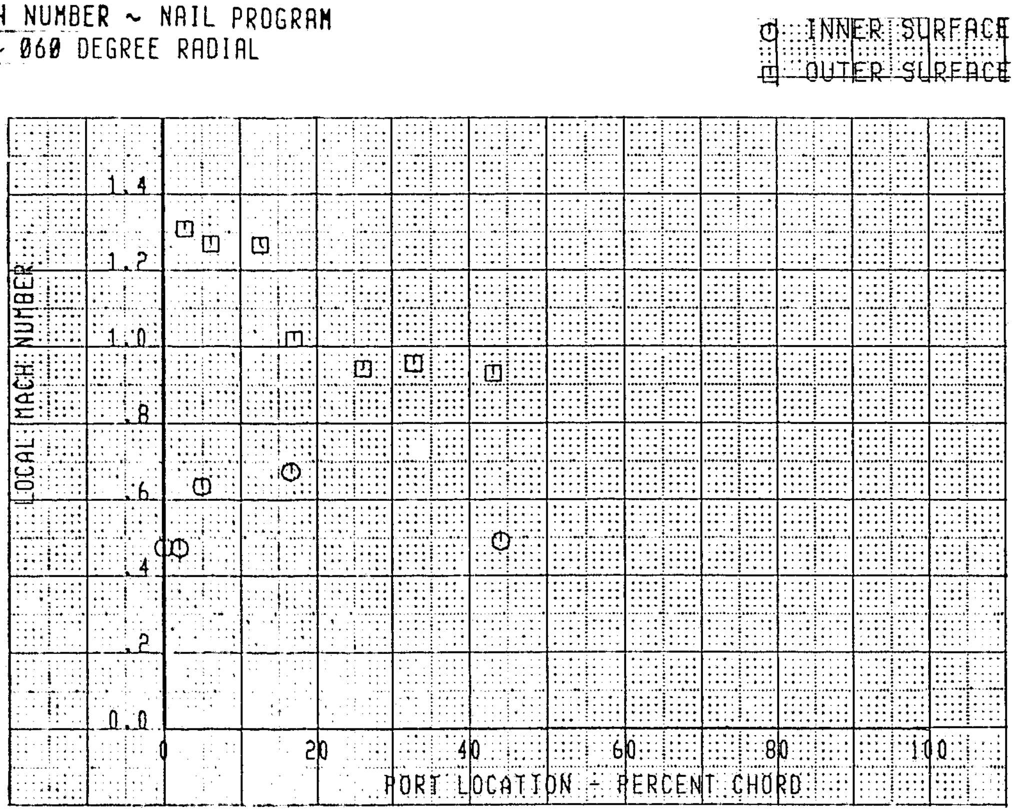
125209-407

Figure B-19. Local Mach Number Plots (Test 273-15, Condition 1.00.137.003) (Continued)

● LOCAL MACH NUMBER ~ IPSA PROGRAM
ENGINE 4 CORE 330 DEG



● LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 4 ~ 060 DEGREE RADIAL

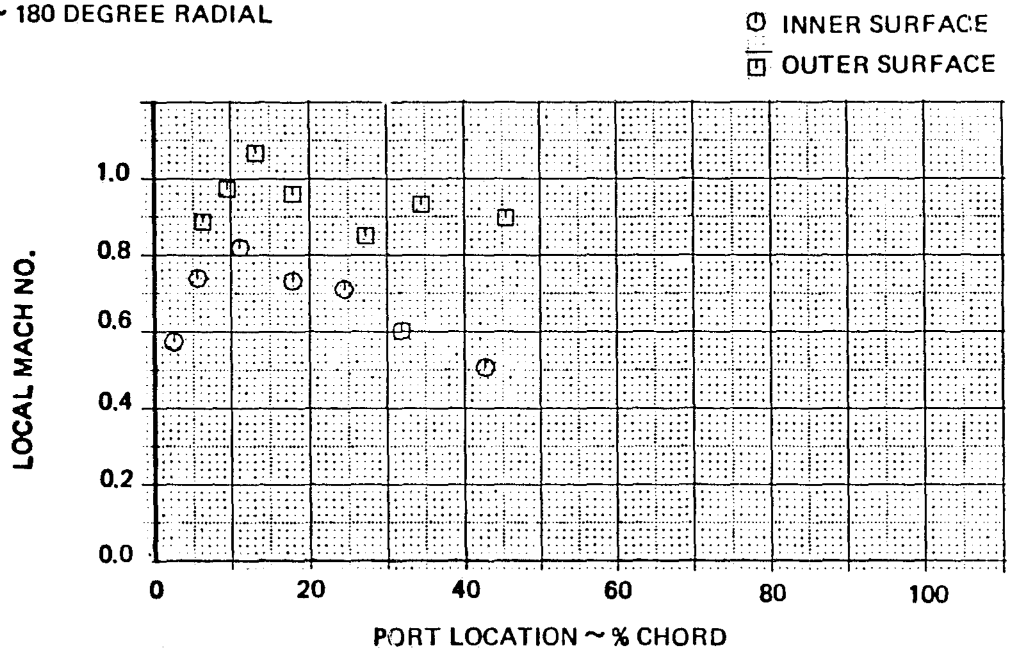


Hp	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS = 0 deg		
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

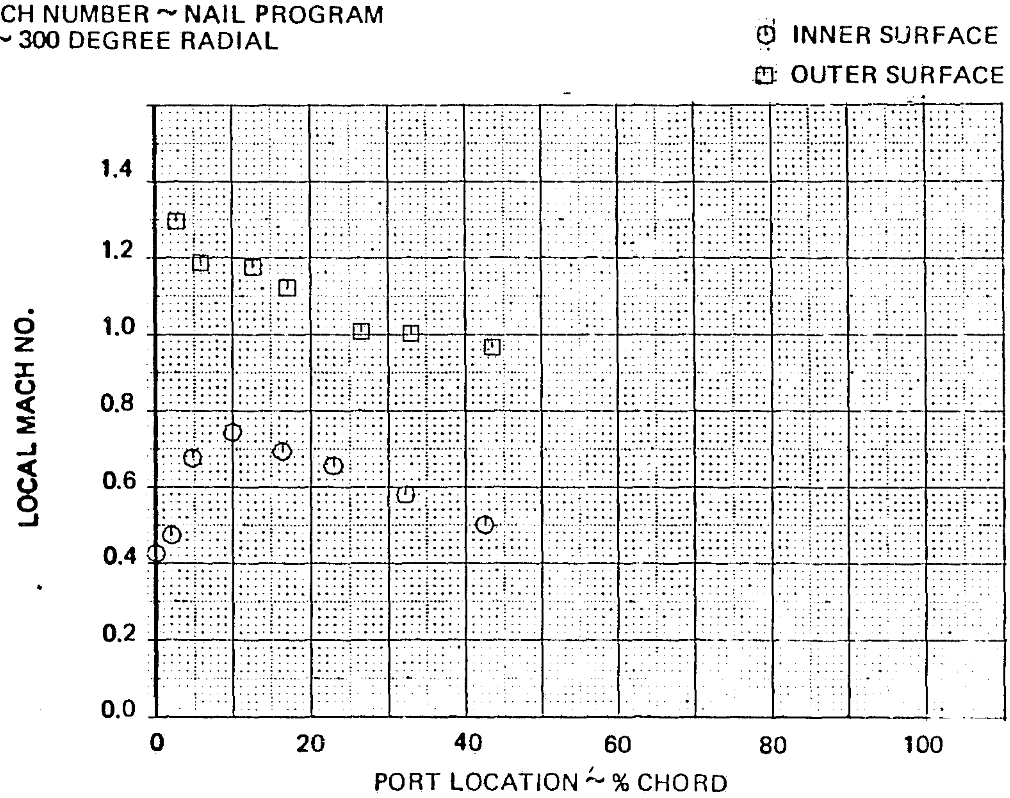
125209-408

Figure B-19. Local Mach Number Plots (Test 273-15, Condition 1.00.137.003) (Continued)

• LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 4 ~ 180 DEGREE RADIAL



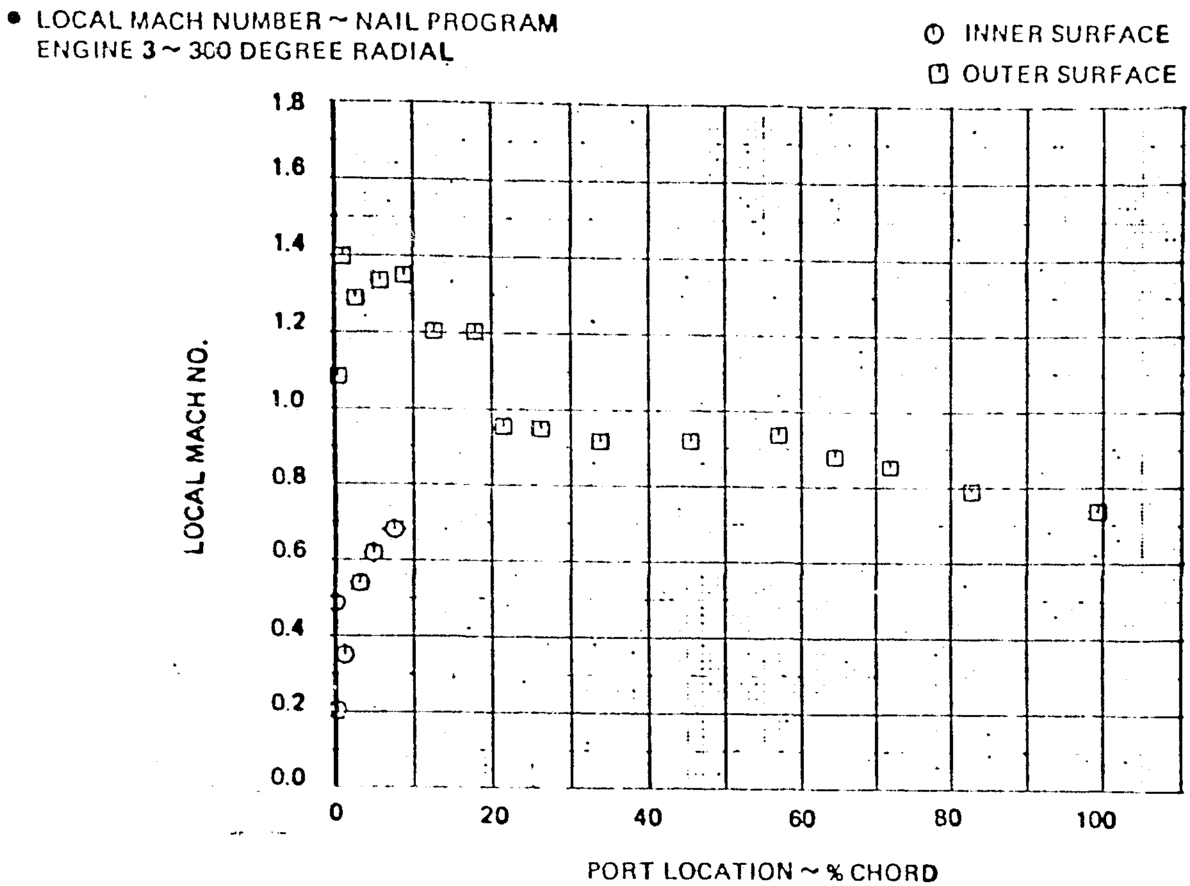
• LOCAL MACH NUMBER ~ NAIL PROGRAM
ENGINE 4 ~ 300 DEGREE RADIAL



Hp	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS	=	0 deg
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

125209-409

Figure B-19. Local Mach Number Plots (Test 273-15, Condition 1.00.137.003) (Concluded)

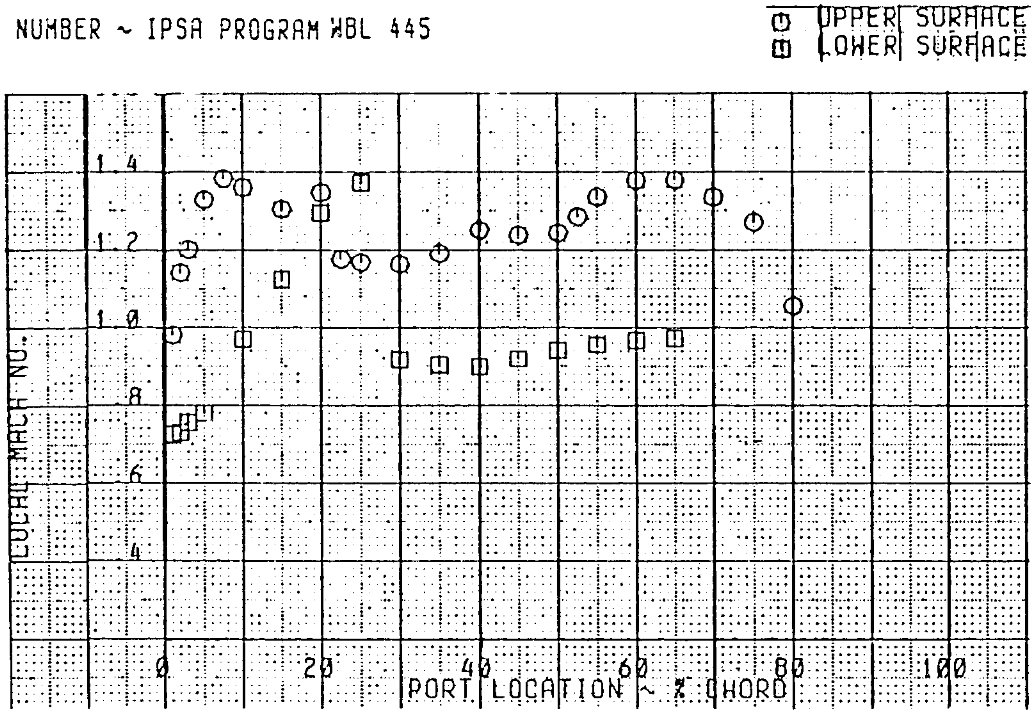


H_p	=	11 601m (38 060 ft)	M	=	0.802
GW	=	218 085 kg (480 796 lbm)	α	=	2.6 deg
Q	=	9.267 kPa (1.344 PSI)	FLAPS = 0 deg		
V_c	=	470.6 km/h (254.1 KTS)	LANDING GEAR UP		

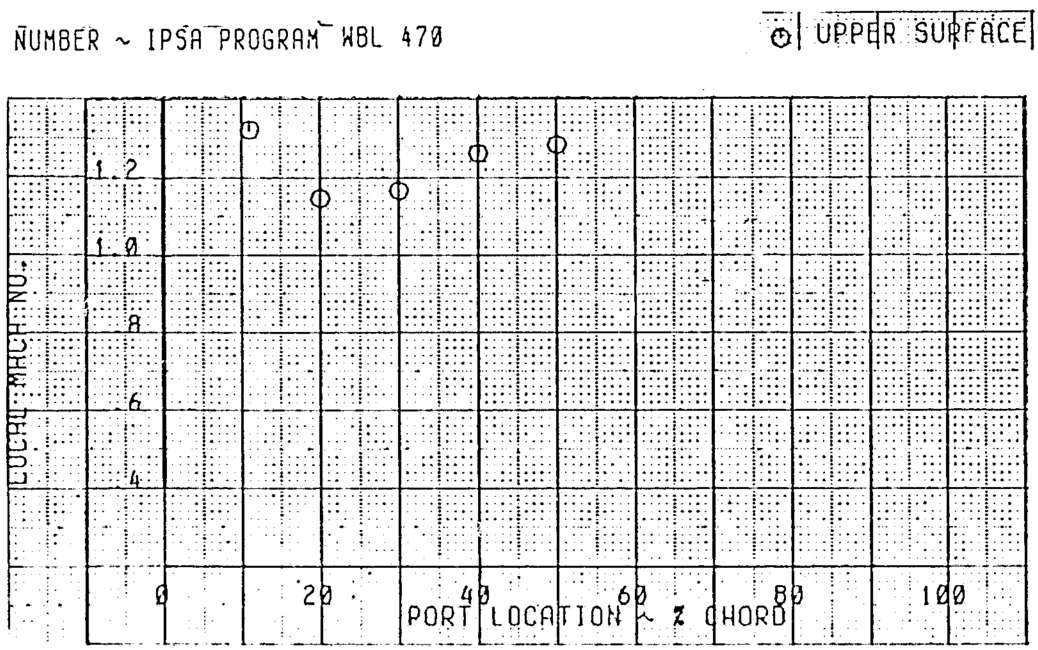
125209-404

Figure B-19. Local Mach Number Plots (Test 273-15, Condition 1.00.137.003)(Continued)

• LOCAL MACH NUMBER ~ IPSA PROGRAM WBL 445



• LOCAL MACH NUMBER ~ IPSA PROGRAM WBL 470

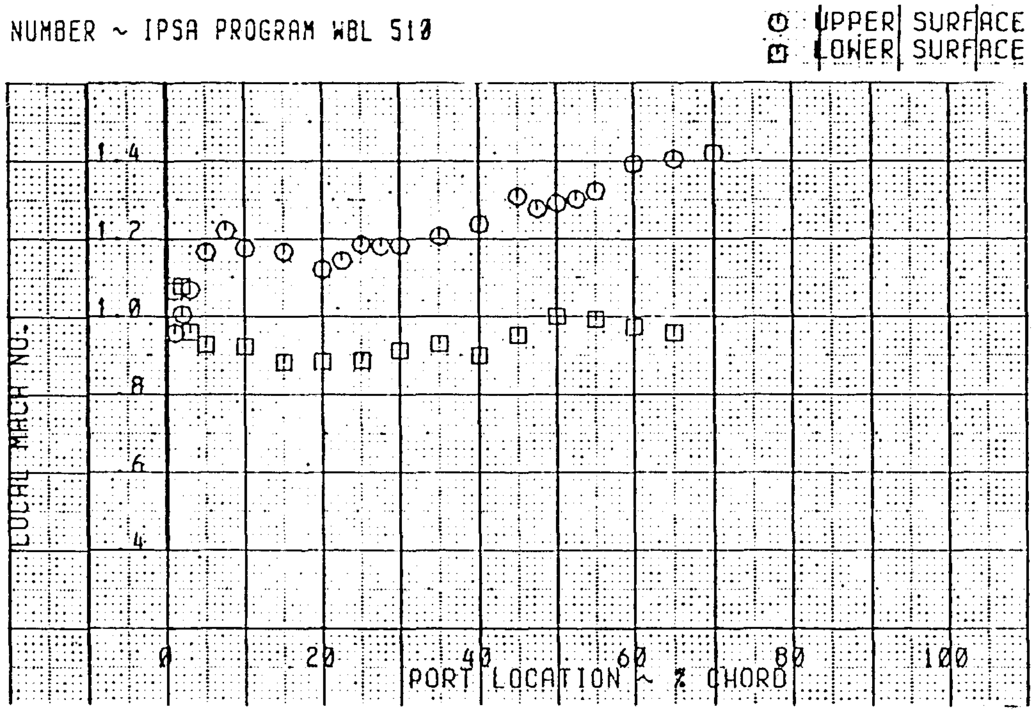


H_P	= 11 432m (37 505 ft)	M	= 0.906
GW	= 216 125 kg (476 473 lbm)	α	= 1.0 deg
Q	= 12.162 kPa (1.764 PSI)	FLAPS = 0 deg	
V_c	= 547.1 km/h (295.4 KTS)	LANDING GEAR UP	

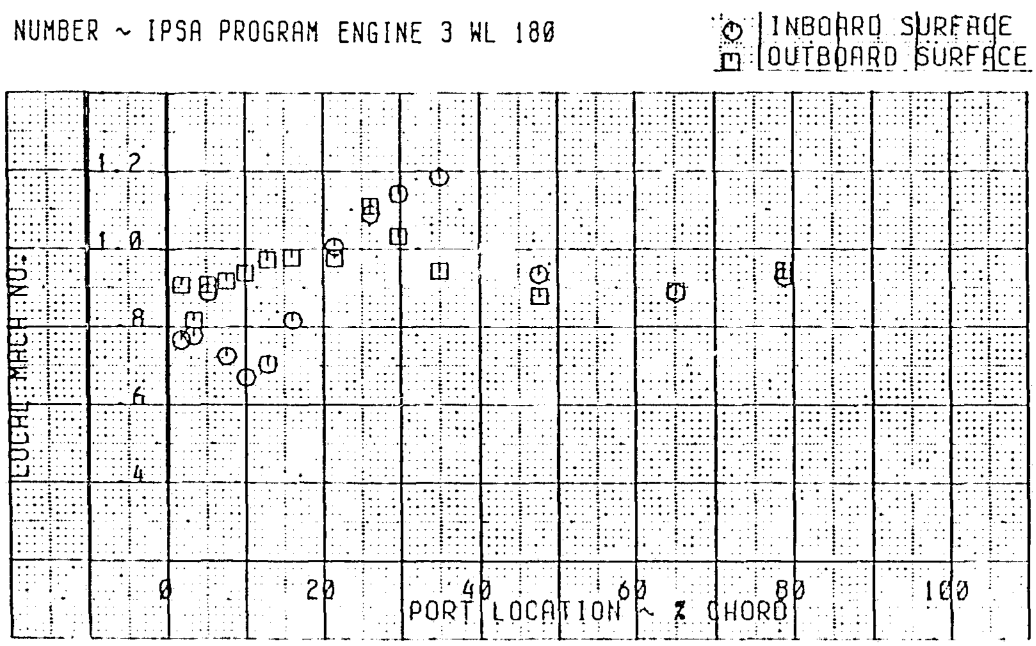
125209-410

Figure B-20. Local Mach Number Plots (Test 273-15, Condition 1.00.137.004)

● LOCAL MACH NUMBER ~ IPSA PROGRAM WBL 510



● LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 3 WL 180

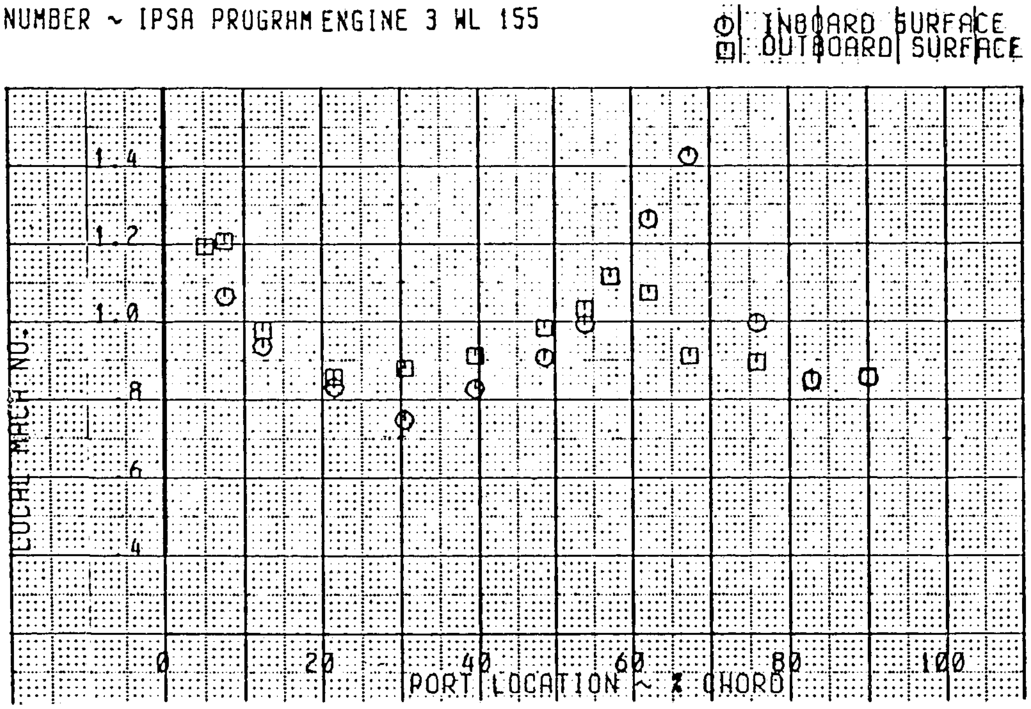


H_p	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12.162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

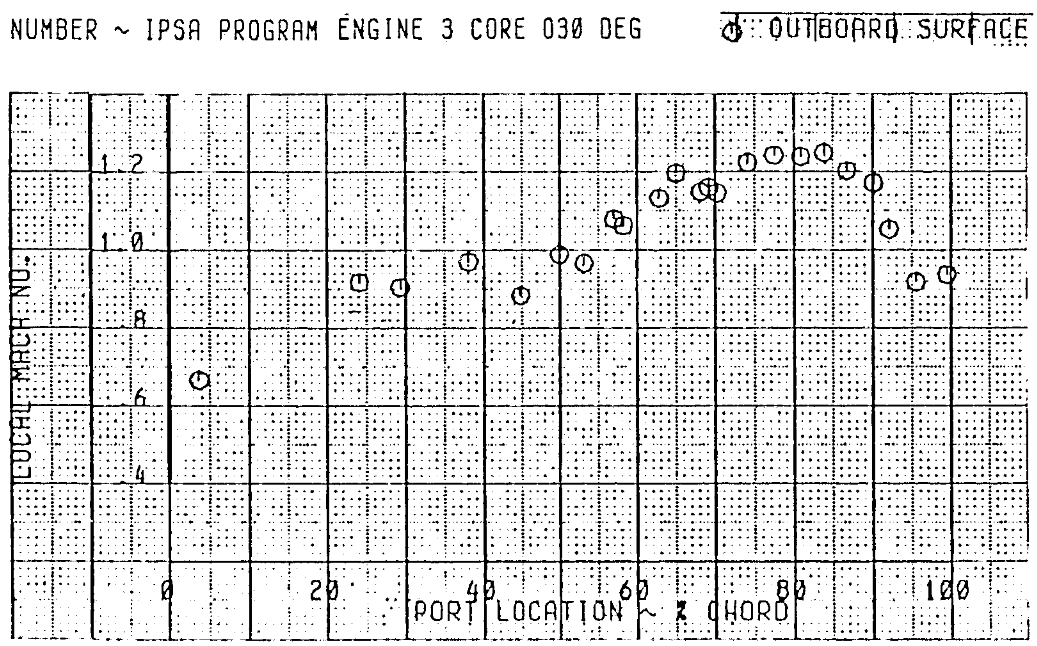
125209-411

Figure B-20. Local Mach Number Plots (Test 273-15, Condition 1.00.137.004)(Continued)

●LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 3 WL 155



●LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 3 CORE 030 DEG

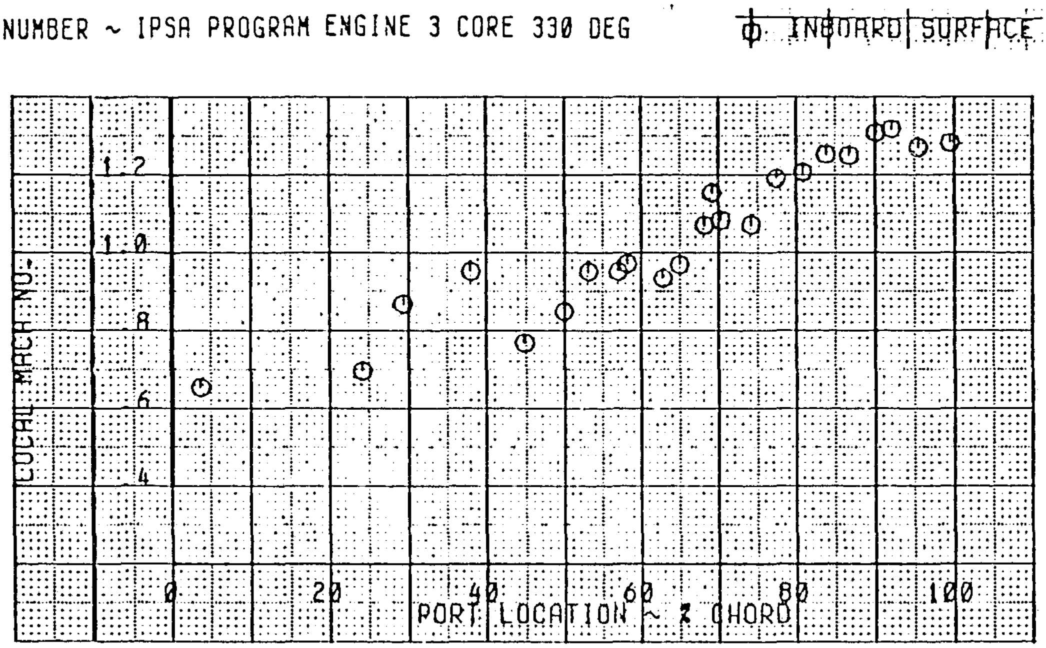


H_p	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12.162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

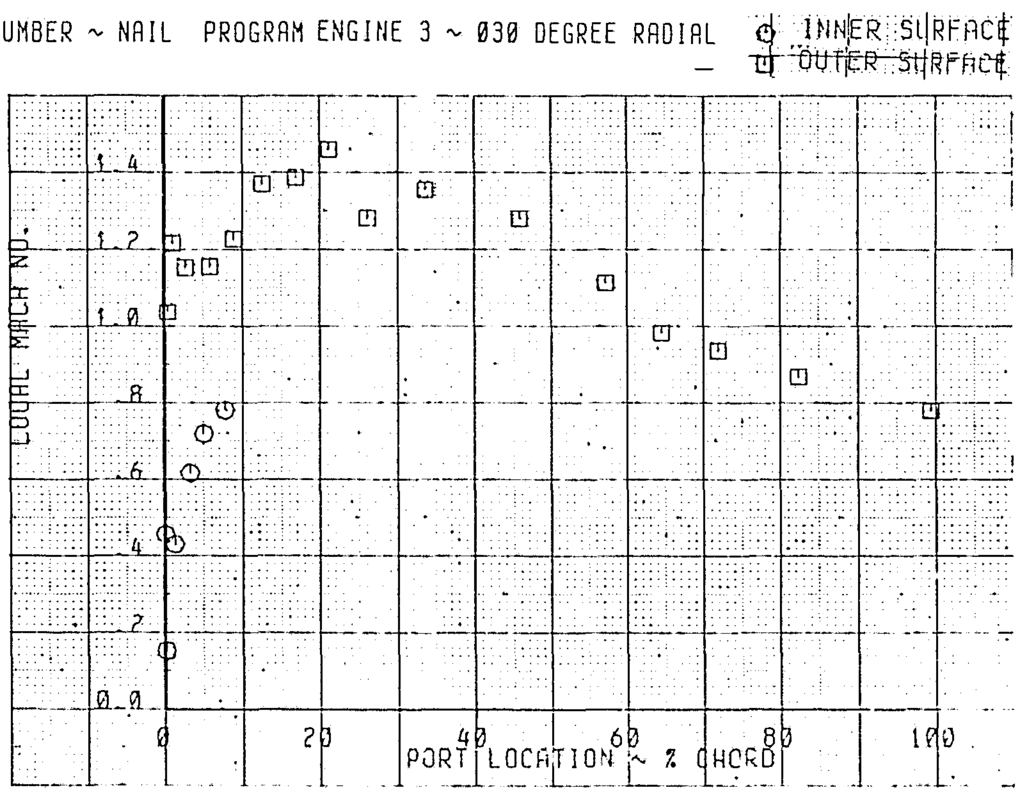
125209-412

Figure B-20. Local Mach Number Plots (Test 273-15, Condition 1.00.137.004) (Continued)

●LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 3 CORE 330 DEG



●LOCAL MACH NUMBER ~ NAIL PROGRAM ENGINE 3 ~ 030 DEGREE RADIAL



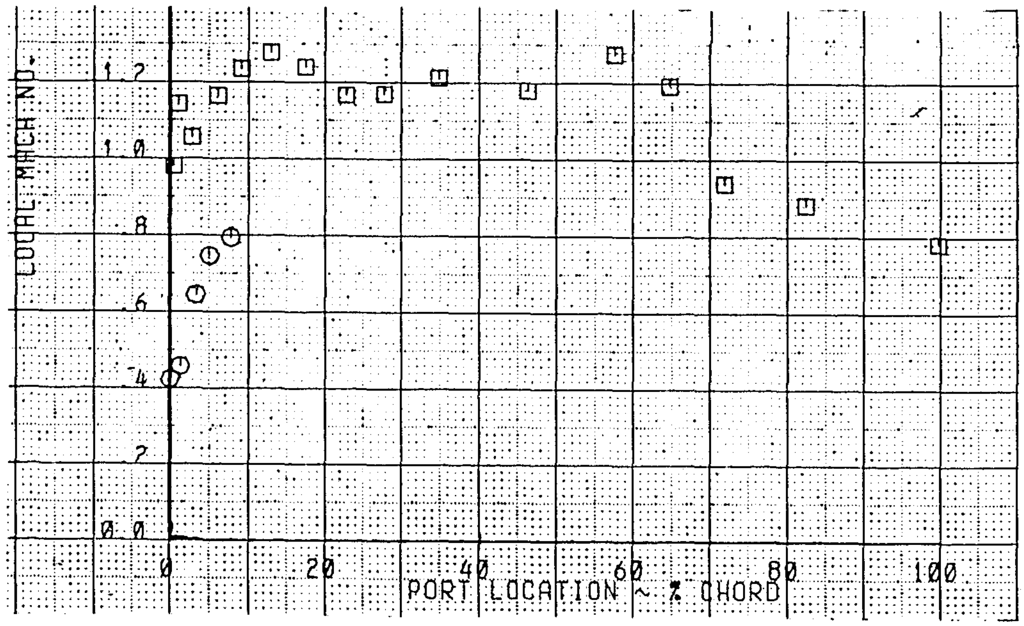
H_P	= 11 432m (37 505 ft)	M	= 0.906
GW	= 216 125 kg (476 473 lbm)	α	= 1.0 deg
Q	= 12.162 kPa (1.764 PSI)	FLAPS = 0 deg	
V_c	= 547.1 km/h (295.4 KTS)	LANDING GEAR UP	

125209-413

Figure B-20. Local Mach Number Plots (Test 273-15, Condition 1.00.137.004)(Continued)

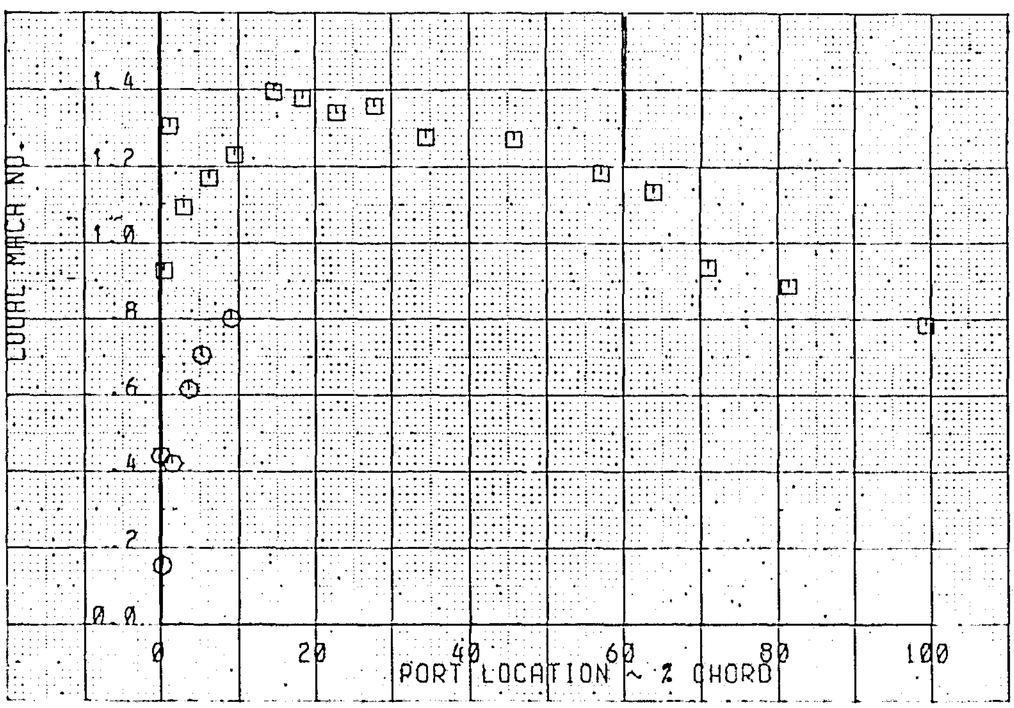
● LOCAL MACH NUMBER ~ NAIL PROGRAM ENGINE 3 ~ 090 DEGREE RADIAL

○ INNER SURFACE
□ OUTER SURFACE



● LOCAL MACH NUMBER ~ NAIL PROGRAM ENGINE 3 ~ 150 DEGREE RADIAL

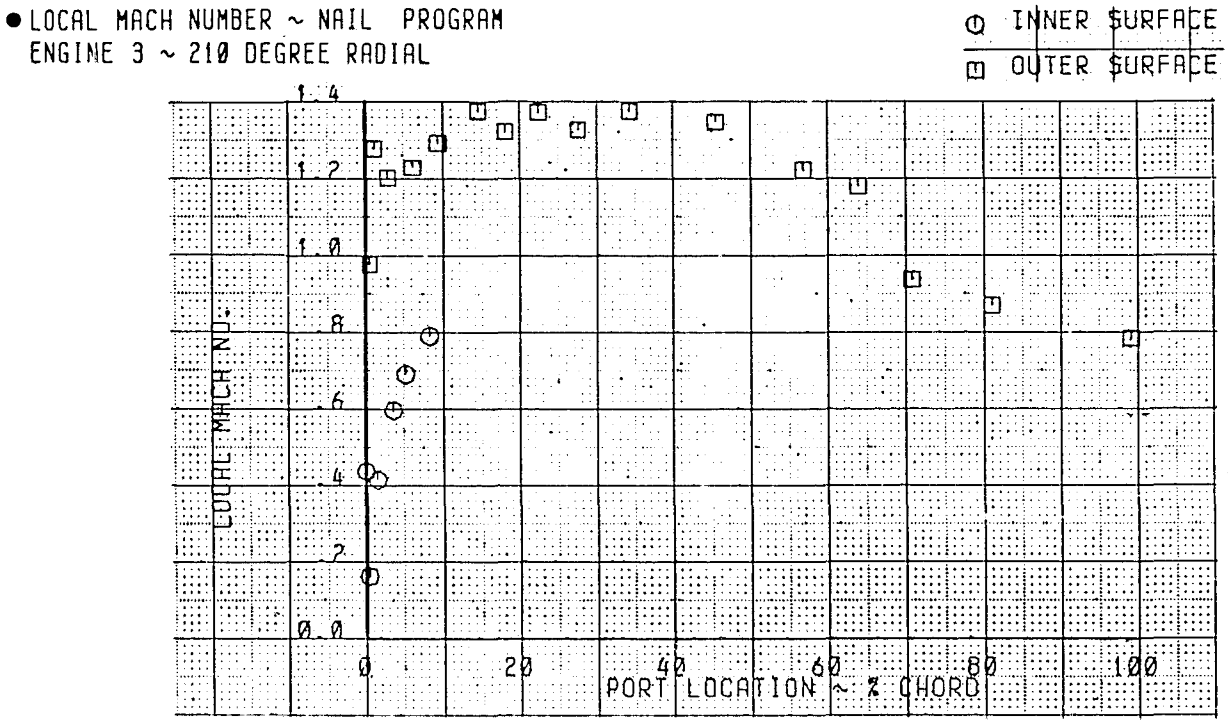
○ INNER SURFACE
□ OUTER SURFACE

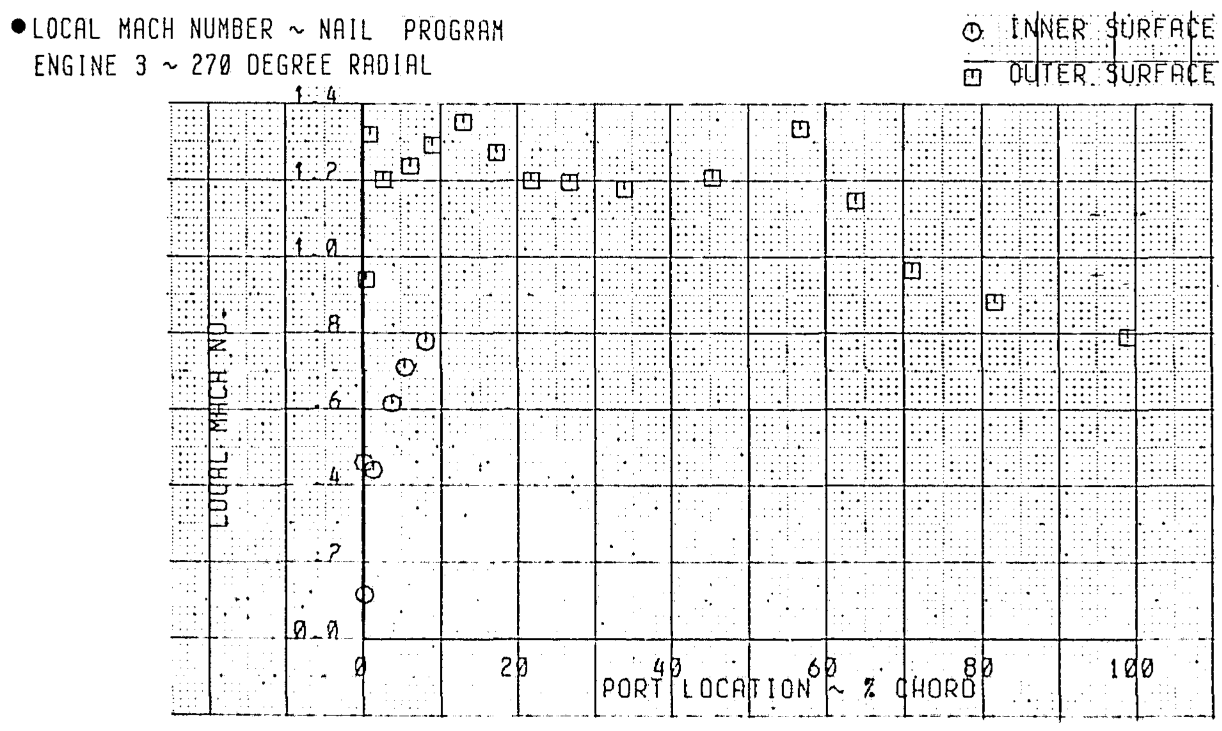


H_P	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12.162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

125209-414

Figure B-20. Local Mach Number Plots (Test 273-15, Condition 1.00.137.004)(Continued)

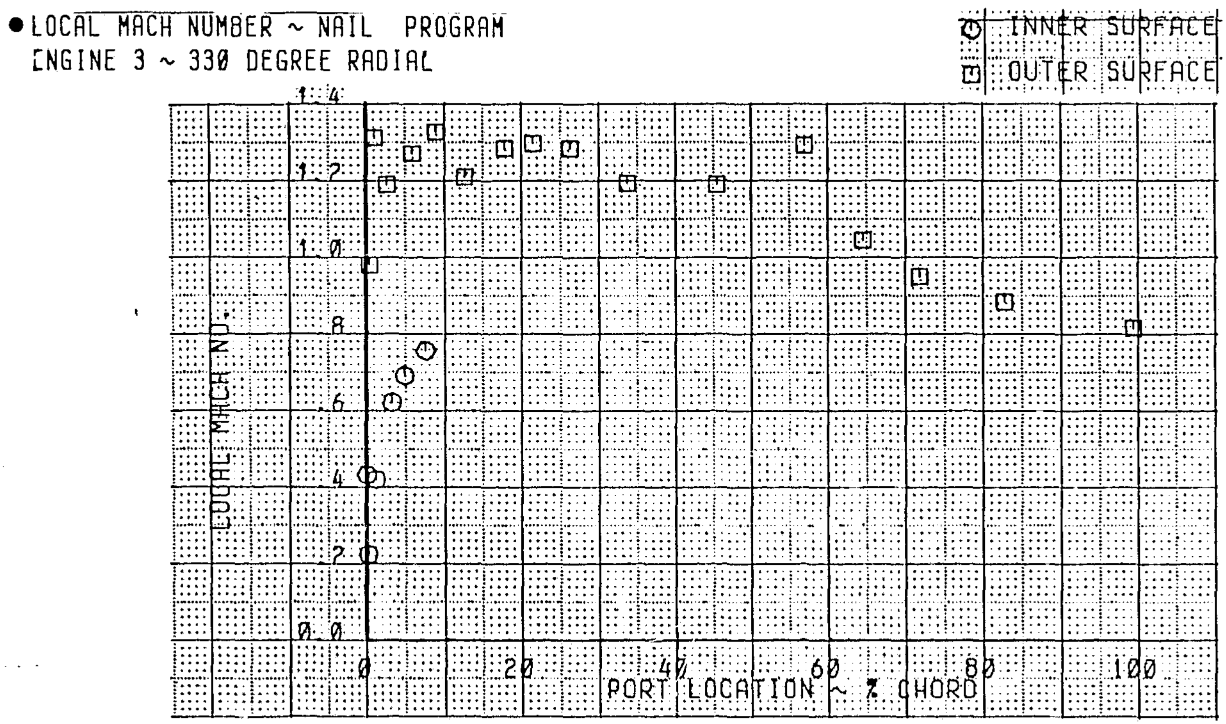




H_p	= 11 432m (37 505 ft)	M	= 0.906
GW	= 216 125 kg (476 473 lbm)	α	= 1.0 deg
Q	= 12.162 kPa (1.764 PSI)	FLAPS = 0 deg	
V_c	= 547.1 km/h (295.4 KTS)	LANDING GEAR UP	

125209-415

Figure B-20. Local Mach Number Plots (Test 273-15, Condition 1.00.137.004) (Continued)

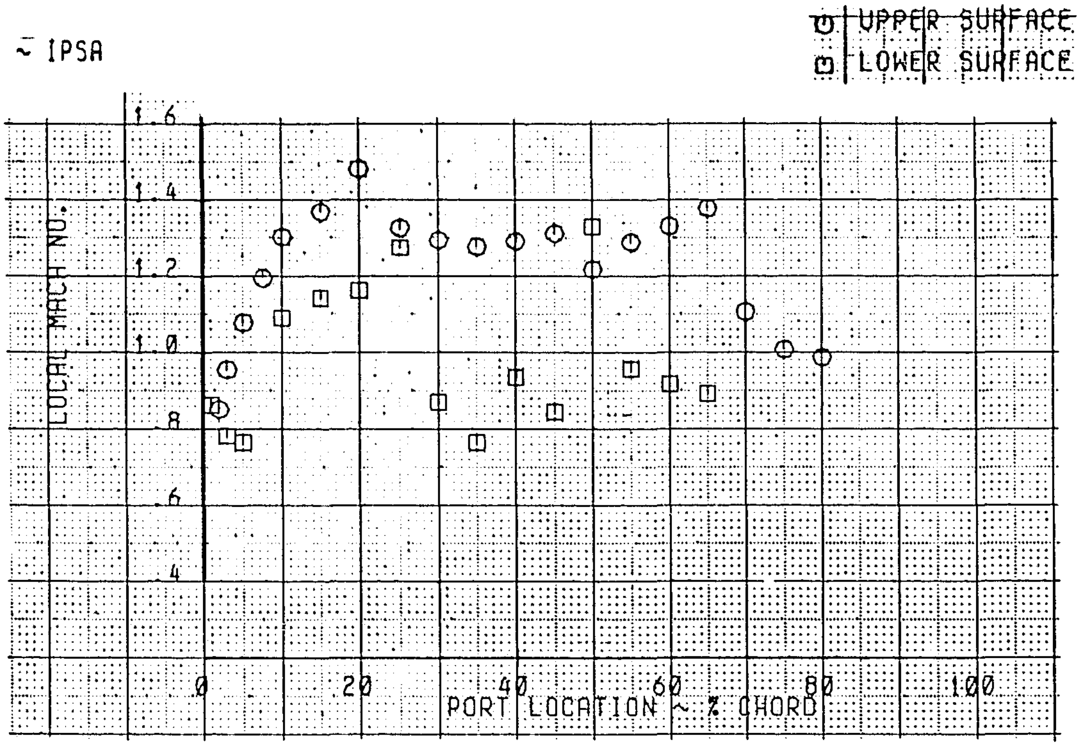


Hp	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12.162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

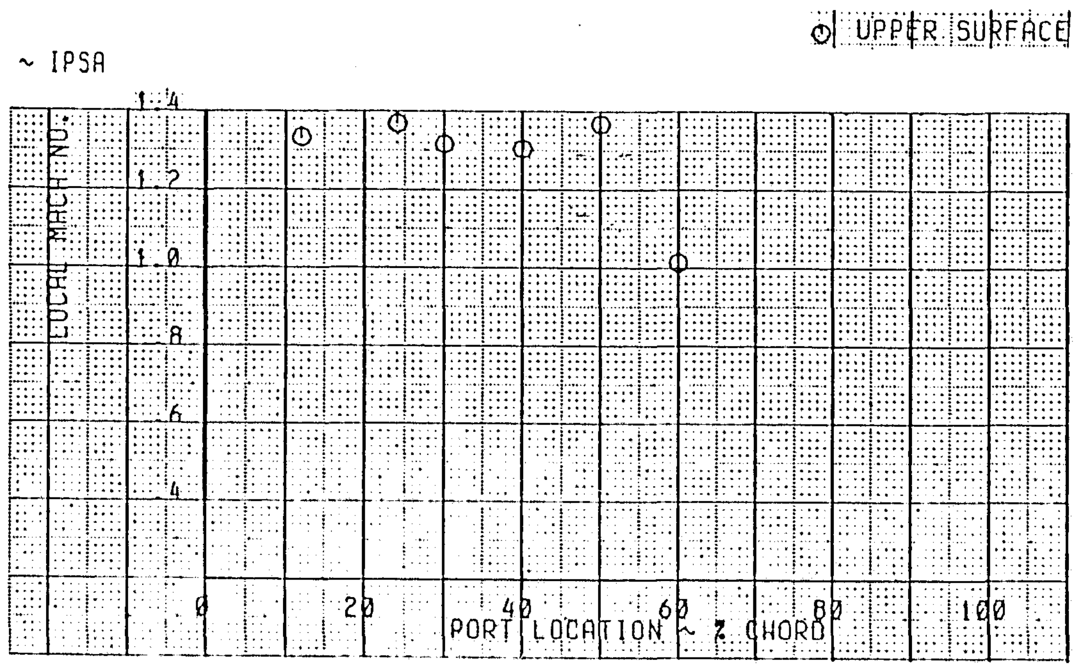
125209-416

Figure B-20. Local Mach Number Plots (Test 273-15, Condition 1.00.137.004) (Continued)

• WBL 809 ~ IPSA



• WBL 834 ~ IPSA

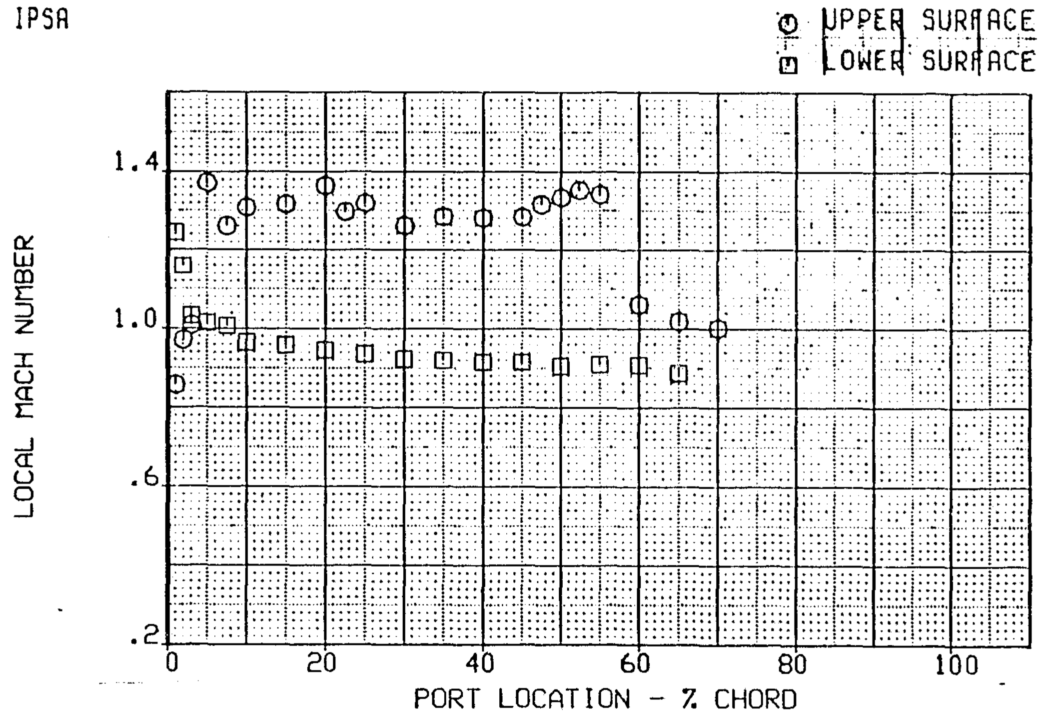


Hp	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12.162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

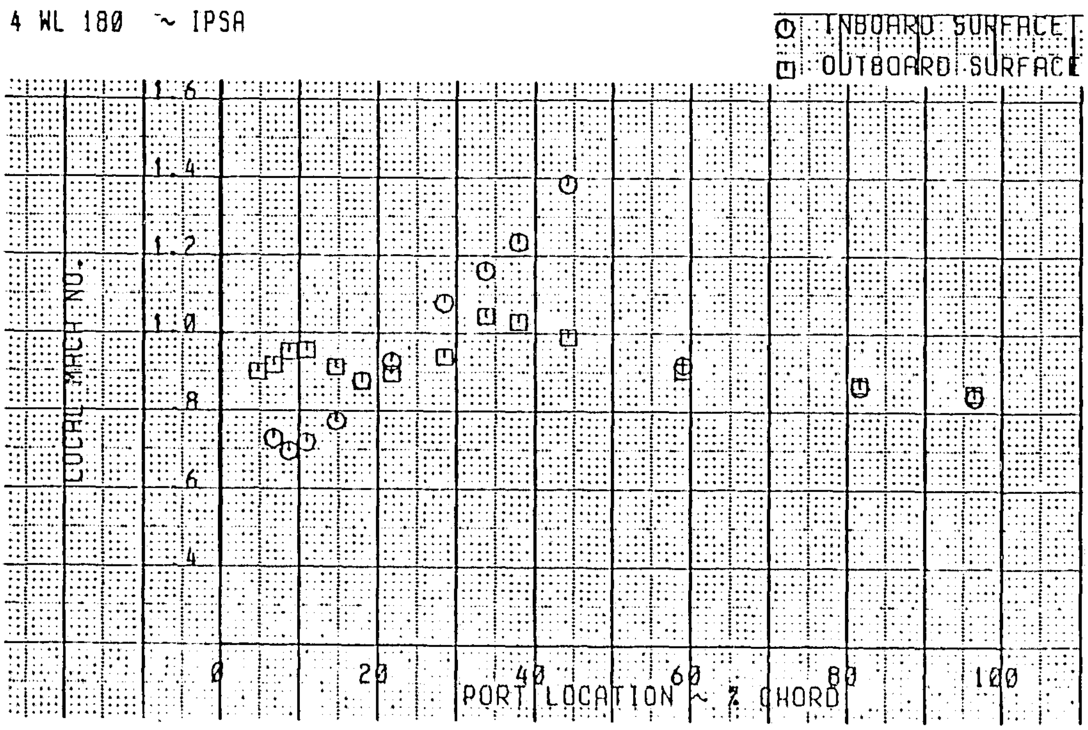
125209-417

Figure B-20. Local Mach Number Plots (Test 273-15, Condition 1.00.137.004)(Continued)

● WBL 870 ~ IPSA



● ENGINE 4 WL 180 ~ IPSA

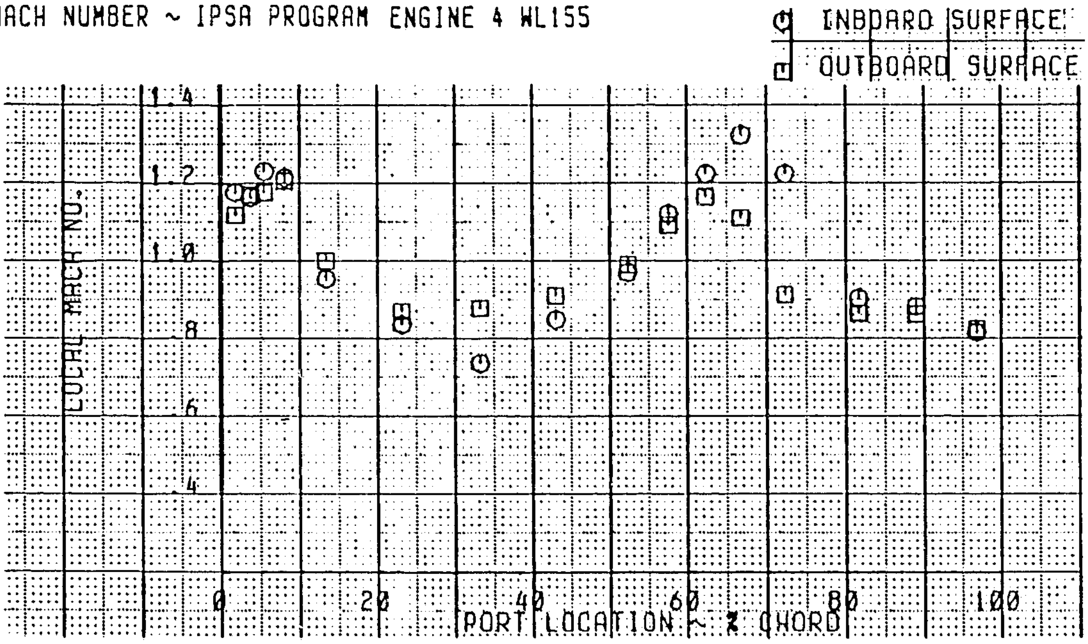


H_p	= 11 432m (37 505 ft)	M	= 0.906
GW	= 216 125 kg (476 473 lbm)	α	= 1.0 deg
Q	= 12.162 kPa (1.764 PSI)	FLAPS = 0 deg	
V_c	= 547.1 km/h (295.4 KTS)	LANDING GEAR UP	

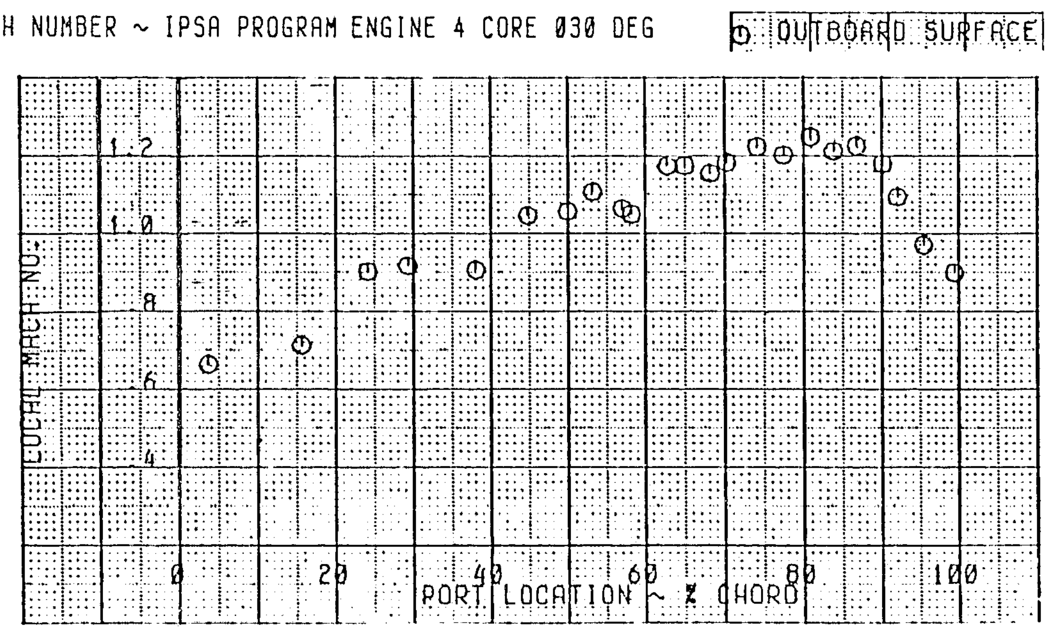
125209-418

Figure B-20. Local Mach Number Plots (Test 273-15, Condition 1.00.137.004)(Continued)

● LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 4 WL155



● LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 4 CORE 030 DEG

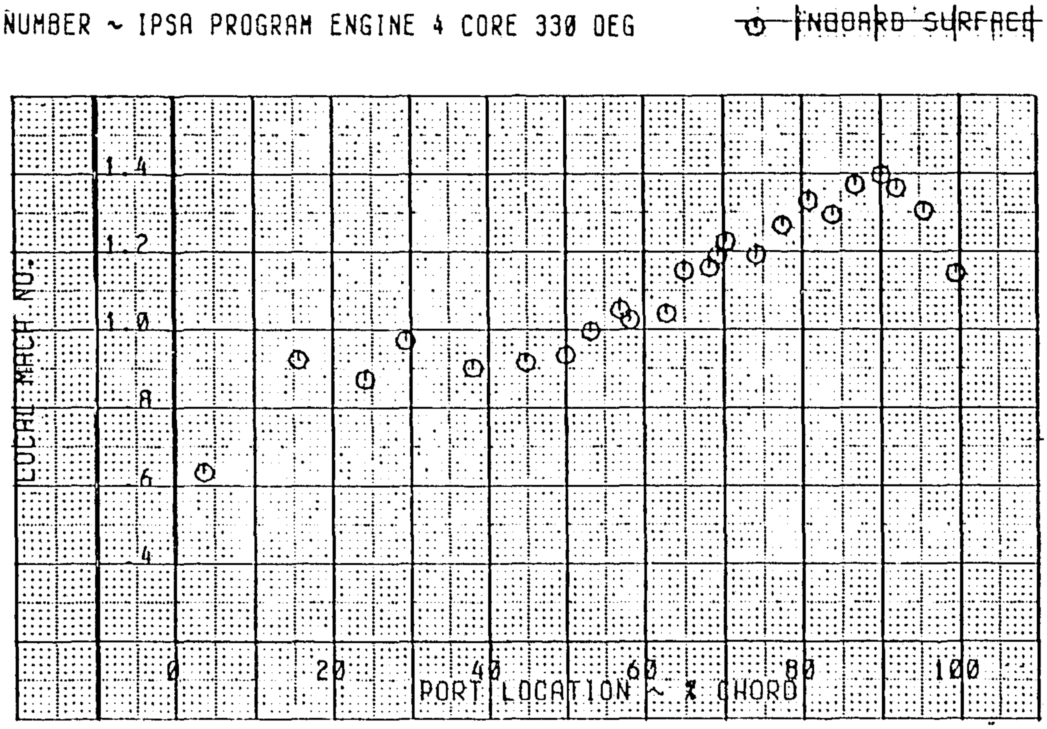


Hp	= 11 432m (37 505 ft)	M	= 0.906
GW	= 216 125 kg (476 473 lbm)	α	= 1.0 deg
Q	= 12.162 kPa (1.764 PSI)	FLAPS = 0 deg	
V_c	= 547.1 km/h (295.4 KTS)	LANDING GEAR UP	

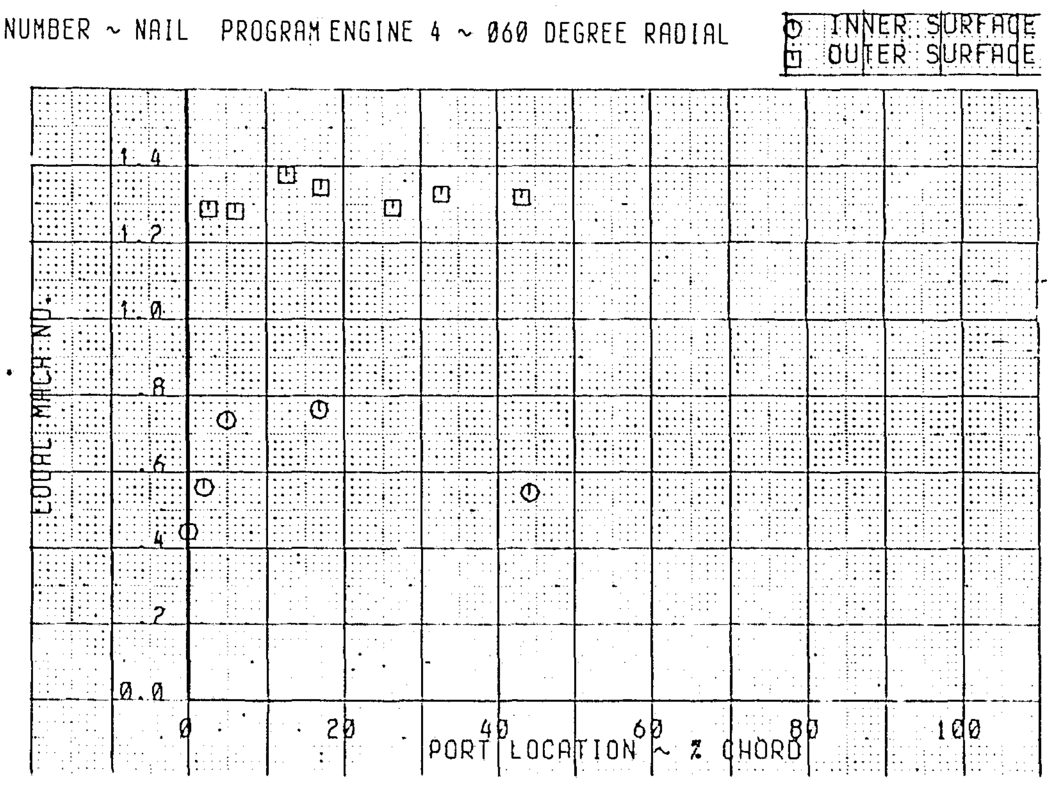
125209-419

Figure B-20. Local Mach Number Plots (Test 273-15, Condition 1.00.137.004)(Continued)

● LOCAL MACH NUMBER ~ IPSA PROGRAM ENGINE 4 CORE 330 DEG



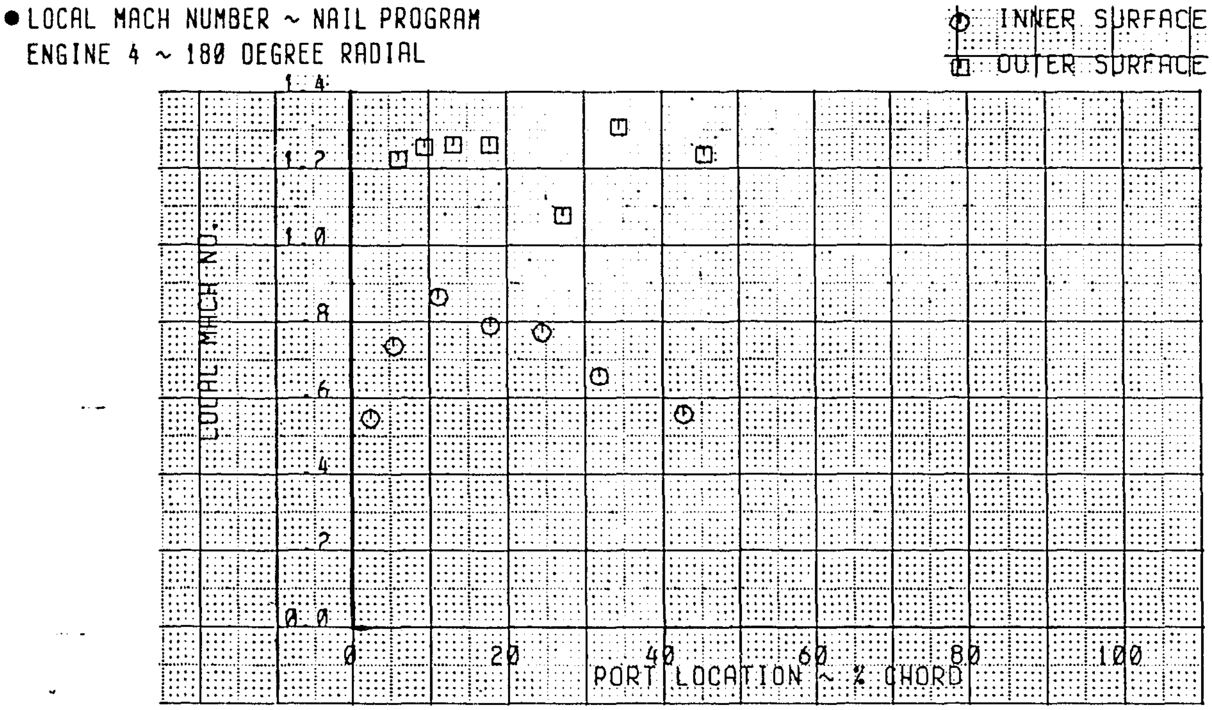
● LOCAL MACH NUMBER ~ NAIL PROGRAM ENGINE 4 ~ 060 DEGREE RADIAL

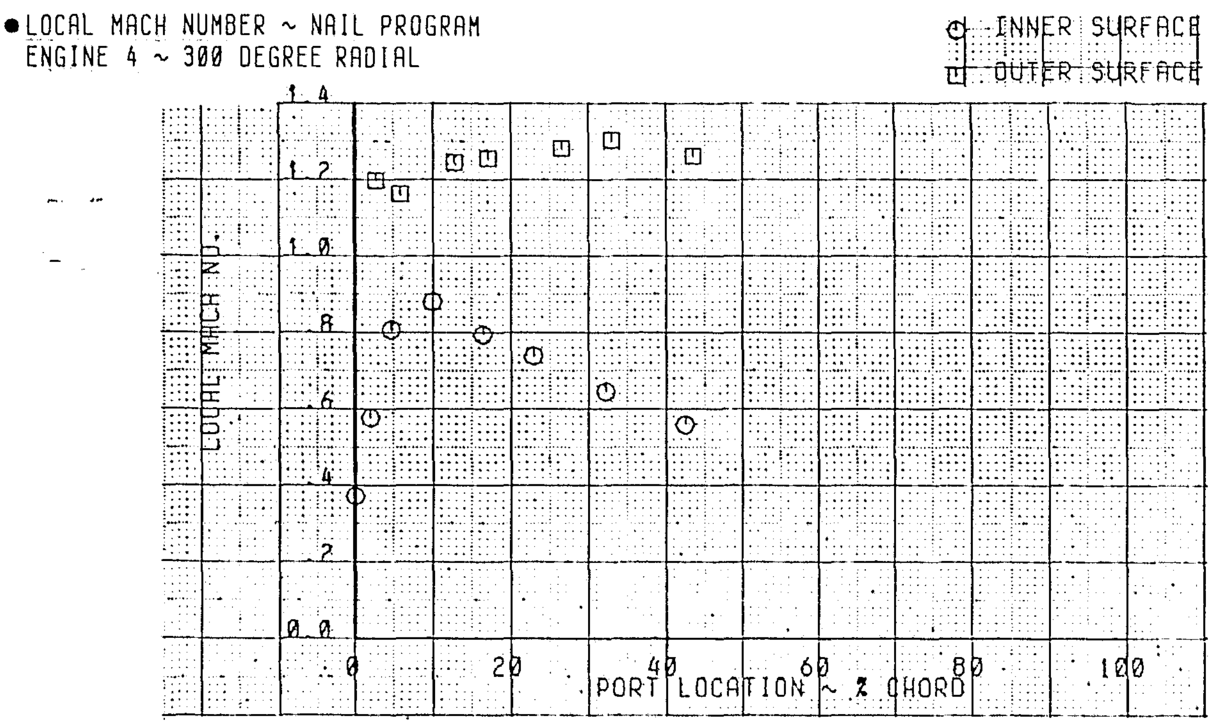


H_P	=	11 432m (37 505 ft)	M	=	0.906
GW	=	216 125 kg (476 473 lbm)	α	=	1.0 deg
Q	=	12.162 kPa (1.764 PSI)	FLAPS = 0 deg		
V_c	=	547.1 km/h (295.4 KTS)	LANDING GEAR UP		

125209-420

Figure B-20. Local Mach Number Plots (Test 273-15, Condition 1.00.137.004)(Continued)





125209-421

H_P	= 11 432m (37 505 ft)	M	= 0.906
GW	= 216 125 kg (476 473 lbm)	α	= 1.0 deg
Q	= 12.162 kPa (1.764 PSI)	FLAPS = 0 deg	
V_c	= 547.1 km/h (295.4 KTS)	LANDING GEAR UP	

Figure B-20. Local Mach Number Plots (Test 273-15, Condition 1.00.137.004) (Concluded)